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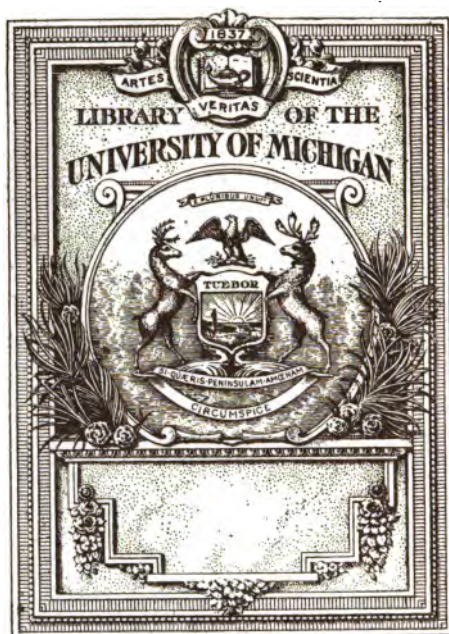
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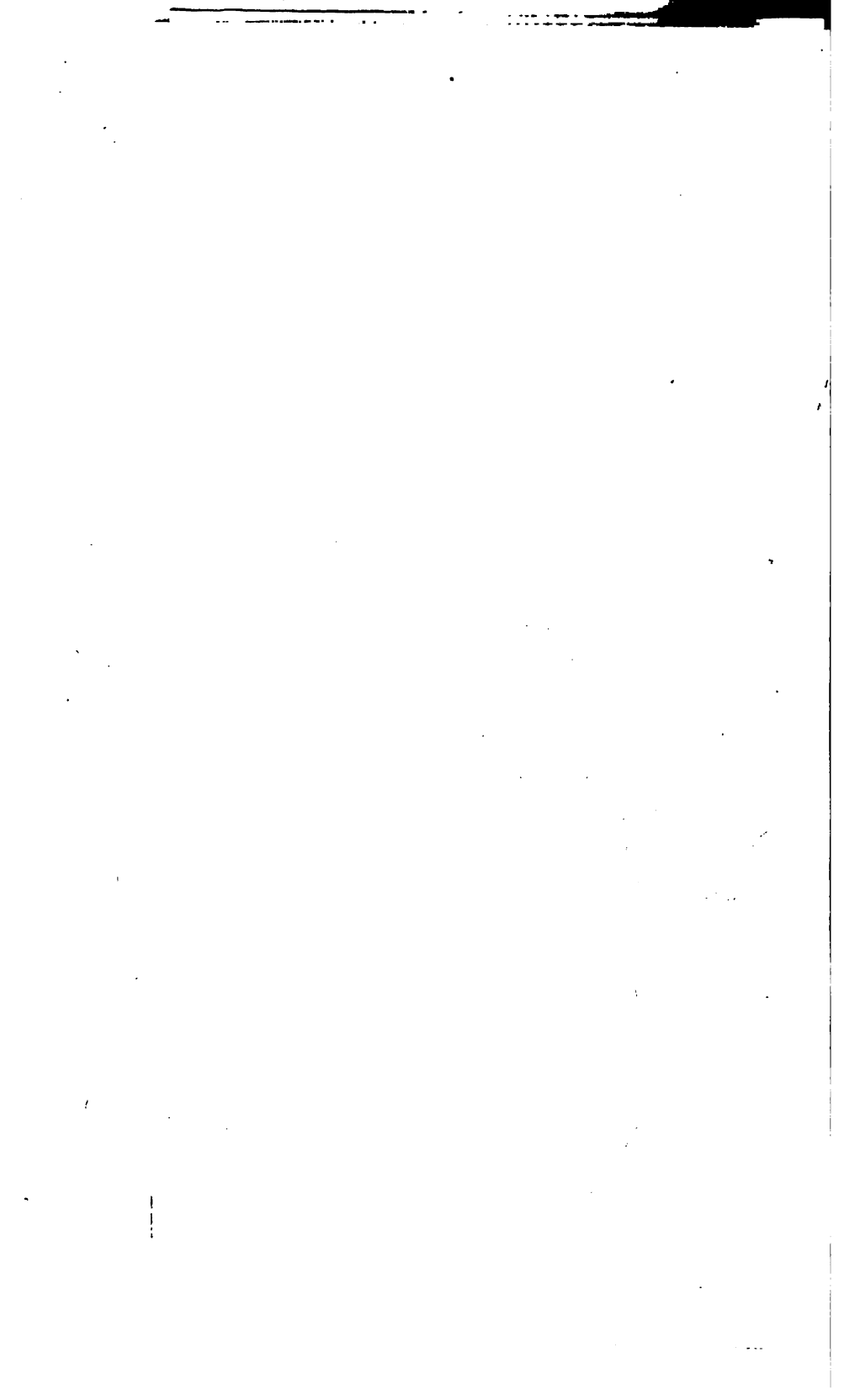












# REPORT

—OF THE—

## Commissioner of Labor

—OF THE—

## State of West Virginia.

1895-1896.

**JOHN M. SYDENSTRICKER,**

*Commissioner.*



CHARLESTON, W. VA.  
MOSES W. DONNALLY, PUBLIC PRINTER.  
1896.



# REPORT.

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*To His Excellency, WILLIAM A. MACCORKLE, Governor of West Virginia:*

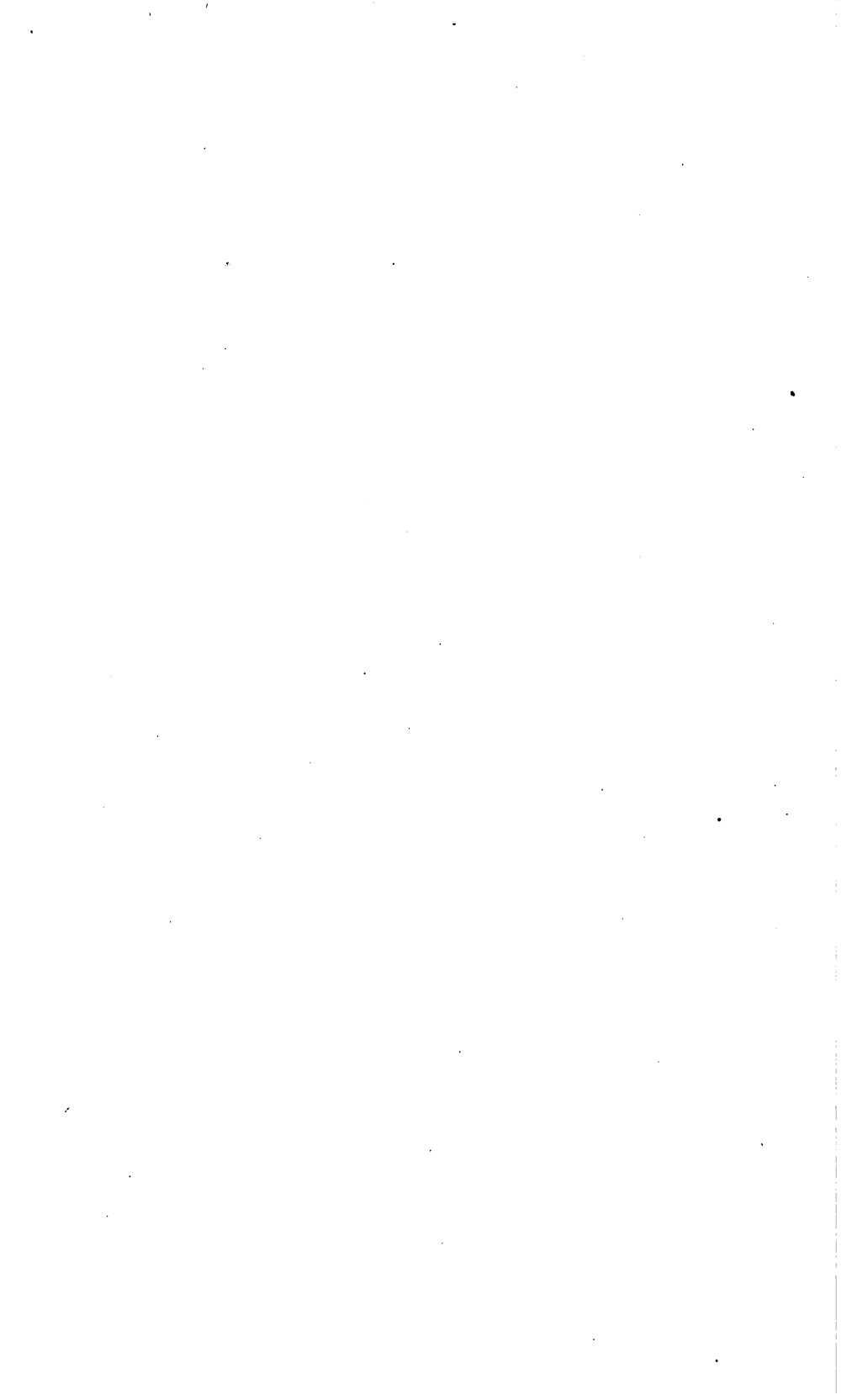
DEAR SIR: In conformity with the provisions of the law creating the Labor Bureau of West Virginia, I have the honor to present herewith my second report.

Owing to the small appropriation made by our last legislature for this Bureau, the low ebb of business during the past two years and the failure to secure satisfactory statistics by the blank method, we have confined our report to those lines of industries which had least prominence in my last report. We have emphasized (as you suggested) the most important industries in which the people of the State are engaged, viz: The production of coal, coke and oil, with tabulated statistics pertaining to the same not only for West Virginia but the United States and other countries. The classification of farms as to size by counties with tables showing the amount of cereals produced, the number of stock raised, and the valuation of the same in each county. The strikes that have occurred, by industries and localities, with causes and results in tabulated form.

In the prosecution of the work of the Bureau, I have received valuable information and assistance in my work from the Hon. Carrol D. Wright, United States Commissioner of Labor and the Hon. Charles D. Walcott, Director United States Geological Survey, and I hereby desire to express my acknowledgments. I have been ably assisted in my efforts in behalf of the Bureau by my assistant, Mr. E. D. Smoot. I desire to sincerely thank Your Excellency for the constant interest and support you have given me in the prosecution of my official duties.

I am, sir, yours very respectfully,

J. M. SYDENSTRICKER,  
Commissioner of Labor.





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## Errata

On page 103 for Report of Petroleum, read *Exports of Petroleum*, and for by Counties, read by *Countries*.



# COAL STATISTICS.



## WEST VIRGINIA COAL FIELDS.

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West Virginia contains more of the great Appalachian coal fields than any other State. The total area embraces about 16,000 square miles, more than 80 per cent. of the total bituminous areas of Ohio and Pennsylvania combined, 60 per cent. more than Pennsylvania alone, and 2,000 square miles more than Kentucky and Tennessee combined. The area underlaid by coal is about two-thirds of the total area of the State.

The general boundaries of the coal fields have been briefly outlined in mineral resources for 1886, as follows :

The eastern boundary begins at the south, on the mountains just east of the Bluestone river, and proceeds thence to Little Sewell Mountain, on the top of which the lowest seam of the lowest coal measures may be seen ; thence, but not by a very clearly defined line with the common boundary of Nicholas and Greenbrier and Webster and Pocahontas counties to Rich Mountain, in Randolph county ; following this last named ridge to Laurel Mountain, the dividing line between Upshur county on the west and Randolph and Barbour counties on the east ; and thence with the Briery Mountain into Preston county, and so on to the Pennsylvania State line. To the east of this boundary there are small outlying patches of coal, as in Greenbrier county, in Meadow Mountain, and possibly in Pocahontas county and in some of the synclinal valleys of Tucker county ; but these patches are unimportant as compared to the vast area to the west, and in but few instances will they yield coal of any value except for local use. This statement will not, however, apply to the small area in Mineral and Grant counties, which is entirely separated by sub carboniferous outcrops from the main West Virginia coal field. In every county west of this general eastern boundary to the Ohio river will valuable coal be found, if not outcropping in the hills, then below the surface and accessible by shafting so that out of the fifty-five counties in the State only Monroe, Pendleton, Hardy, Hampshire, Morgan and Jefferson counties may be considered as lacking in workable coal beds.

For convenience of description the coal formation may be divided into five groups, as follows :

(1.) The Pottsville conglomerate group is composed of alternating beds of conglomerate and sandstone, the former characterizing the group with beds of shale and slates, which contain in many places valuable workable coal beds. The thickness of the group varies from 100 to 1,000 feet,

(2.) The lower coal Measures, resting upon the great Millstone Grit or Pottsville conglomerate series, containing very many important and valuable coal seams and having a thick series of sandstones, known as the Mahoning, capping the group.

(3.) The lower Barren Measures, composed of reddish and bluish shales and slates, sandstones, and limestones, the latter in some parts of the State being very important, usually destitute of workable coal beds, and terminating above at the Pittsburg Coal bed.

(4.) The upper coal Measures, containing several important coal seams, of which the Pittsburg or the Cumberland big seam lies at the base.

(5.) The upper Bassen Measures, composed of sandstones and shales.

### PRODUCTION.

The development of the West Virginia coal fields has been of extraordinary growth. In 1873 the product was 672,000 short tons. In 1883 it was 2,235,833, and in 1893 it was 10,708,578 short tons, and added nearly another million tons increase in the product for 1894. In 1882, the first year covered by mineral resources, West Virginia ranked fifth in importance among the coal producing states, and held that position until 1886, when she took fourth place. At this time she produced only about one-half as much as Ohio the third in rank. The ratio of increase in the two states did not vary much until 1889, when West Virginia's product amounted to more than 60 per cent. that of Ohio; in 1891 it was more than 70 per cent; in 1893 it was more than 80 per cent., and in 1894 the product of Ohio was less than 3 per cent. larger than West Virginia. It must be taken into consideration, however, that in 1894 Ohio was one of the heaviest sufferers from the effects of the great strike, while West Virginia was in the main benefitted. In some districts where the Miner's Union was strong the West Virginia operators suffered with the others, while in other districts where the Union was weak the strike did good rather than damage, and in the Pocahontas field, which was exempt from the strike order the operators and the railroad were alike, unable to meet the demands upon them. Then too, West Virginia suffered less from the effects of the industrial depression than most of the coal producing states, for the average price declined but 2 cents per ton compared with 1893, and the decline in nearly all the other bituminous regions was considerably more than that. It is not to be supposed that the same conditions which affected the comparison of Ohio and West Virginia in 1894 will obtain in 1895 nor for years to come, if ever, but still with the advantage possessed by the latter for extending her markets, and particularly the facilities for reaching the seaboard, the product is likely to increase in greater proportion than Ohio's and the order of this standing will be reversed before the close of the century.

During 1894, an organization was formed by the operators along

the New and Kanawha rivers in Fayette and Kanawha counties, under the name of the Kanawha and New River Coal and Coke Company, for the purpose of extending the markets for the coals of those regions particularly in the west. The company is incorporated with a capital of \$1,000,000, and the various mining companies will participate in the result on a mutual basis. Another change of importance has been made in the methods of marketing West Virginia coals, and probably to this change is due in large measure the formation of the new company. Heretofore the Chesapeake and Ohio Railroad has been the purchaser of all the coal mined along its line, and has the operators paid a certain price agreed upon.

The railroad company would then transport the coal to the markets and receive for freight the differences between the price at mines and delivered. At the last session of the legislature a law was passed prohibiting railroad companies from engaging in the coal business in this way, as being outside their legitimate business of common carriers, so that for the future operators will be obliged to go into the market for themselves.

TABLE NO. 1.

Coal Product of West Virginia in 1893, by Counties.

COUNTIES.	Loaded at Mines for Shipment.	Sold to Local Trade and Used by Employes.	Used at Mines for Steam and Heat.	Made Into Coke	Total Product.	Total Value.	Average Price per Ton.	Average Number of Days Active	Total Number of Employes.
	Short Tons.	Short Tons.	Short Tons.	Short Tons.	Short Tons.				
Barbour.....	4,088	1,196			5,284	\$ 4,718	\$.89	217	8
Brooke.....	25,700	6,650	550		32,900	29,015	.88	260	79
Fayette.....	2,116,636	34,323	12,657	489,224	2,650,860	2,120,758	.80	224	4,487
Grant.....	5,600	1,120	11		6,731	5,109	.76	150	15
Harrison.....	168,686	3,181	228	21,567	193,632	128,828	.67	211	298
Kanawha.....	1,415,745	22,485	5,106	2,916	1,446,252	1,236,861	.86	276	2,306
Logan.....		425			425	425	1.00	50	4
Marion.....	783,024	10,708	13,490	255,112	1,062,334	742,616	.70	203	1,536
Marshall.....	152,647	5,200	1,100		158,997	124,407	.78	194	215
Mason.....	112,408	39,815	1,410		153,633	143,130	.93	194	376
McDowell.....	1,620,409	29,173	6,549	510,347	2,166,478	1,526,598	.70	185	3,375
Mercer.....	776,217	5,134	2,368	211,711	995,424	690,490	.69	209	1,281
Mineral.....	613,320	9,316	350		623,025	537,366	.82	229	666
Monongalia.....	27,500	200	350	10,550	38,600	27,975	.72	225	60
Ohio.....		80,565	45		80,610	66,269	.82	221	135
Preston.....	52,211	1,579	989	27,893	82,672	57,131	.69	141	200
Putnam.....	208,231	1,450	200		209,881	211,556	1.01	204	520
Raleigh.....	91,730	600			92,330	92,330	1.00	165	145
Randolph.....	1,494				1,494	1,494	1.00	100	8
Taylor.....	63,661	1,820	91	13,068	77,640	45,968	.58	260	105
Tucker.....	322,576	15,749	1,406	136,641	476,372	388,126	.71	267	675
Small Mines.....		120,000			120,000	120,000			
Total.....	8,591,962	390,689	46,898	1,679,029	10,708,578	8,251,170	.77	219	16,524

TABLE No. 2.

Coal Product of West Virginia in 1894, by Counties.

COUNTIES.	Number of Mines	Loaded at Mines for Shipment.	Sold to Local Trade and Used by Employees.	Used at Mines for Steam and Heat.	Made into Coke.	Total Product.	Total Value.	Average Price per Ton.	Average Number of Days Active.	Total Number of Employees.
		Short Tons.	Short Tons.	Short Tons.	Short Tons.	Short Tons.				
Barbour.....	2	7,616	2,104			9,720	\$ 8,679	\$0.80	223	20
Brooke.....	4	39,623	5,222	150		44,995	34,461	.77	205	100
Fayette.....	45	2,157,737	33,726	18,522	356,627	2,566,612	1,852,472	.72	164	4,594
Grant.....	2	6,104	454			6,563	4,510	.69	110	23
Harrison.....	10	235,173	2,782		17,679	255,634	182,653	.71	168	519
Kanawha.....	23	1,059,719	17,356	5,360	1,924	1,044,354	942,782	.87	155	2,706
Marion.....	1	1,154,744	6,743	13,842	224,929	1,399,898	1,198,514	.86	274	1,479
Marshall.....	4	145,513	10,407	400		156,320	113,337	.72½	177	220
Mason.....	9	65,577	72,470	2,755		140,802	122,036	.86	177	391
McDowell.....	29	2,088,219	26,303	8,842	1,031,965	3,158,369	2,104,466	.67	207	3,891
Mercer.....	7	786,363	5,620	8,450	272,517	1,072,950	761,199	.71	211	1,274
Mineral.....	6	559,829	3,163	278		563,270	432,234	.77	189	564
Monongalia.....	3	59,883	985	645	18,045	79,558	69,039	.87	181	164
Ohio.....	12	18,000	84,610	300		102,910	86,555	.84	166	249
Preston.....	4	35,844	829	246	3,895	40,814	27,969	.68	152	105
Putnam.....	4	201,625	16,363	2,150		220,138	247,032	1.12	158	530
Randolph.....	3	15,643	560			16,203	14,692	.90	93	120
Taylor.....	2	84,755	9,296	108	8,523	102,682	63,498	.62	24	158
Tucker.....	4	277,307	4,194	2,438	80,011	363,950	225,961	.62	179	390
Logan, Raleigh and Wayne.....	3	116,970				116,970	89,754	.77	118	327
Small Mines.....			125,000			125,000	125,000			
Total.....	187	9,116,314	428,202	64,126	2,019,115	11,637,757	\$ 8,706,808	\$0.75	186	17,824

TABLE NO. 3.

Coal Product of West Virginia in 1895 by Counties.

COUNTIES.	Number of Mines	Loaded at Mines for Shipment.	Sold to Local Trade and Used by Employees.	Used at Mines for Steam and Heat.	Made into Coke.	Total Product.	Total Value.	Average Price per Ton.	Average Number of Days Active.	Average Number of Employees.
		Short Tons.	Short Tons.	Short Tons.	Short Tons.	Short Tons.				
Barbour.....	2	12,746	569			13,306	\$ 10,656	\$0.80	222	20
Brooke.....	3	64,039	10,632	150		74,841	54,167	.72	213	116
Fayette.....	50	2,628,646	73,303	16,401	546,459	3,264,822	2,335,492	.72	261	5,537
Harrison.....	10	263,161	2,269	318	29,942	292,690	196,119	.67	212	513
Kanawha.....	26	1,070,300	32,582	5,468	26,418	1,134,794	844,310	.79	161	2,738
Marion.....	11	918,407	10,717	13,531	316,908	1,257,563	805,801	.64	238	1,812
Marshall.....	4	177,992	15,695	390		194,077	131,681	.67	232	346
Mason.....	6	78,903	40,066	1,777		120,766	102,988	.85	167	367
McDowell.....	29	1,637,802	13,797	6,599	717,197	2,355,395	1,393,423	.59	199	3,955
Mercer.....	8	547,118	3,860	1,932	134,394	687,364	387,578	.56	169	1,148
Mineral.....	6	637,536	7,777	297		675,610	424,643	.63	229	656
Monongalia.....	2	42,949	663	688	23,226	67,510	51,941	.77	200	135
Ohio.....	9	67,921	101,448	465		169,834	128,380	.76	227	221
Preston.....	4	60,716	951	583	44,800	107,153	70,000	.65	225	208
Putnam.....	4	120,332	150			120,482	114,394	.95	112	438
Taylor.....	3	81,333	794	49	11,106	93,232	51,512	.55	159	180
Tucker.....	5	258,397	3,058	1,937	186,604	449,991	305,962	.68	188	484
Wayne.....	3	3,833				3,833	7,755	2.02	82	26
Grant, Logan, Min-go, Raleigh and Randolph.....	5	138,142	1,656			139,798	99,728	.71	173	255
Small mines.....			125,000			125,000	125,000			
Total.....	190	8,858,256	445,023	50,595	2,034,087	11,397,961	\$ 7,710,575	.68	195	19,159



TABLE No. 4.

Coal Products of West Virginia since 1873.

Years.	Short Tons.	Years.	Short Tons.
1873.....	672,000	1885.....	3,369,062
1874.....	1,120,000	1886.....	4,005,796
1875.....	1,120,000	1887.....	4,881,620
1876.....	896,000	1888.....	5,498,800
1877.....	1,120,000	1889.....	6,231,880
1878.....	1,120,000	1890.....	7,394,654
1879.....	1,400,000	1891.....	9,220,065
1880.....	1,568,000	1892.....	9,738,755
1881.....	1,680,000	1893.....	10,708,578
1882.....	2,240,000	1894.....	11,027,757
1883.....	2,345,833	1895.....	11,663,471
1884.....	3,360,000		

TABLE NO. 5.

*Annual Increase in the Coal Output of West Virginia since 1880,  
and the Average Annual Increase in Sixteen Years.*

YEARS.	SHORT TONS.
1881 over 1880.....	112,000
1882 over 1881.....	560,000
1883 over 1882.....	95,833
1884 over 1883.....	1,024,167
1885 over 1884.....	9,062
1886 over 1885.....	636,734
1887 over 1886.....	875,824
1888 over 1887.....	617,180
1889 over 1888.....	733,080
1890 over 1889.....	1,162,774
1891 over 1890.....	1,826,011
1892 over 1891.....	518,090
1893 over 1892.....	969,823
1894 over 1893.....	919,179
1895 over 1894.....	35,714
Total increase in sixteen years.....	10,095,471
Average annual increase.....	630,967

In the following table will be found the total product of the State, by Counties, since 1886 with the increases and decreases in 1895, as compared with 1894:

TABLE NO. 6.

Coal Product of West Virginia from 1886 to 1895, by Counties.

*Short Tons.*

COUNTIES.	1886	1887	1888	1889	1890
Brooke	22,880	40,366	11,568	31,119	36,794
Fayette	1,413,778	1,252,457	1,977,030	1,450,740	1,591,298
Harrison	234,597	154,220	109,515	174,115	144,403
Kanawha	876,785	1,126,839	863,600	1,218,236	1,421,116
McDowell				586,599	956,224
Marion	172,879	365,844	363,974	282,467	455,728
Marshall	251,333	92,368	47,702	47,706	123,669
Mason	150,878	140,968	72,410	185,030	145,314
Mercer	328,733	575,885	969,395	921,741	1,005,870
Mineral	361,312	478,636	456,361	493,464	573,644
Monongalia				74,041	81,360
Ohio	(a)	131,936	140,019	143,170	103,586
Preston	170,721	267,221	231,540	129,932	178,439
Putnam	(b)	53,200	145,440	213,753	205,178
Raleigh					
Taylor	(c)	168,000	55,729	83,012	76,618
Tucker	22,400	24,707	62,517	173,492	245,378
Other Counties and Small Mines				18,304	100,000
Total	4,005,796	4,881,620	5,498,800	6,231,880	7,394,654

TABLE NO. 6.—Continued.

COUNTIES.	1891	1892	1893	1894	1895	Increase in 1895	Decrease in 1895
Barbour				9,720	13,306	3,586	
Brooke	33,950	26,521	32,900	44,945	74,841	29,816	
Fayette	2,307,421	2,455,400	2,652,861	2,566,612	3,261,825	695,213	
Grant				6,563	392		6,171
Harrison	150,522	221,726	193,632	255,634	292,693	37,059	
Kanawha	1,324,788	1,317,621	1,446,352	1,084,359	1,131,798	50,439	
Logan	(d)			11,611	51,018	39,407	
McDowell	1,267,136	1,696,975	2,164,478	3,158,369	2,395,365		763,004
Marion	1,000,017	919,704	1,062,334	1,399,891	1,257,563		142,335
Marshall	193,703	118,974	158,997	156,320	194,077	37,557	
Mason	159,990	159,644	153,642	140,802	120,766		20,026
Mercer	1,172,911	1,191,951	995,428	1,072,950	687,364		385,586
Mineral	693,574	552,402	603,025	563,270	675,610	112,340	
Monongalia	31,006	48,900	38,660	79,558	67,510		12,018
Ohio	90,600	120,323	100,610	102,910	169,834	66,924	
Preston	140,399	98,006	82,672	40,851	107,053	66,199	
Putnam	94,231	89,886	209,881	220,138	120,482		99,656
Raleigh		95,824	92,330	84,359	88,188	3,829	
Randolph				16,200	200		16,003
Taylor	101,661	115,145	78,640	102,682	93,252		9,430
Tucker	358,734	359,752	476,372	363,950	449,991	86,041	
Wayne				21,000	3,833		17,167
Other Counties and Small Mines	109,000	120,000	133,934	125,000	125,000		
Total	9,220,665	9,738,755	10,708,578	11,627,757	11,387,961	(e) 239,796	

a Included in product of Marshall County.

b Included in product of Mason County.

c Included in product of Harrison County.

d Product of Mingo County included in product of Logan County.

e Net decrease.

TABLE NO. 7.

Uniformly with the discussion of the product of other States the following tables are given, showing the average price per ton and the statistics of labor employed and working time for a series of years:

Average prices for West Virginia coal since 1889 in counties producing 10,000 tons or over.

COUNTIES.	1889	1890	1891	1892	1893	1894	1895
Barbour.....	\$ 0.73	\$ 0.77½	\$ 0.82½	\$ 0.94	\$ 0.88	\$ 0.77	\$ 0.80
Brooke.....	.90	.90	.85	.84	.80	.72	.72
Fayette.....	.66	.70	.72	.77	.67	.71	.67
Harrison.....	.96	.98	.97	.92	.86	.87	.79
Kanawha.....						.64½	.60
Logan.....	.71	.69	.70	.74	.70	.86	.64
Marion.....	.75	.81½	.80	.79	.78	.72½	.67
Mason.....	.91	.93	.90	.96	.93	.86	.85
McDowell.....	.67½	.71	.67½	.73	.70	.67	.55
Mercer.....	.64½	.75	.74	.76	.69	.71	.56
Mineral.....	.80	.87½	.84	.77	.82	.77	.63
Monongalia.....	.72	.64	.65	.72	.72	.87	.77
Ohio.....	.88½	.97	.78	.99	.82	.84	.76
Preston.....	.66	.72	.64	.67	.69	.68	.65
Putnam.....	1.12	.97	1.19	1.11	1.01	1.12	.95
Raleigh.....				.89	1.00	.78½	.78½
Randolph.....					1.00	.90	
Taylor.....	.63½	.76	.60½	.61	.58	.62	.55
Tucker.....	.69½	.76	.61½	.70	.71	.62	.68
Wayne.....						.76	
The State.....	.82	.84	.80	.80	.77	.75	.68

TABLE NO. 8.

Statistics of Labor Employed and Working Time at West Virginia Coal Mines.

COUNTIES.	1890		1891		1892	
	Average number employed	Average working days.	Average number employed	Average working days.	Average number employed	Average working days.
Barbour.....	50	202	59	274	51	226
Brooke.....	2,824	225	3,823	245	4,102	252
Fayette.....	305	194	285	214	473	148
Harrison.....	2,756	230	2,802	217	2,677	217
Kanawha.....	865	218	1,408	279	1,114	275
Marion.....	175	265	190	257	210	199
Marshall.....	480	229	311	236	338	215
Mason.....	1,315	183	1,536	227	2,061	195
McDowell.....	1,465	217	1,510	244	1,621	211
Mercer.....	630	279	624	959½	500	244
Mineral.....	55	260	50	280	72	308
Monongalia.....	153	268	131	276	222	243
Ohio.....	337	282	304	221	170	209
Preston.....	375	194	526	143	483	180
Raleigh.....					120	187
Randolph.....	108	256	118	287	128	282
Taylor.....	353	309	550	306	525	306
Tucker.....						
The State.....	12,236	227	14,227	237	14,867	228

TABLE 8.—Continued.

Statistics of Labor Employed and Working Time at West Virginia Coal Mines.

COUNTIES.	1893		1894		1895	
	Average number employed	Average working days.	Average number employed	Average working days.	Average number employed	Average working days.
Barbour .....					20	222
Brooke .....	79	270	100	205	126	212
Fayette .....	4,487	224	4,584	164	5,537	201
Harrison .....	288	211	439	178	513	212
Kanawha .....	2,306	276	2,706	155	2,738	161
Logan .....			150	70	65	160
Marion .....	1,539	203	1,479	274	1,812	238
Marshall .....	245	194	220	177	336	232
Mason .....	376	194	391	177	367	167
McDowell .....	3,375	185	3,891	207	3,955	199
Mercer .....	1,281	209	1,274	211	1,145	169
Mineral .....	666	229	564	189	656	229
Monongalia .....	60	225	164	181	135	200
Ohio .....	135	221	249	166	221	227
Preston .....	200	140	105	152	208	225
Putnam .....	520	204	530	158	438	112
Raleigh .....	145	165	142	146	133	166
Randolph .....	8	100	120	93		
Taylor .....	105	260	158	204	180	159
Tucker .....	675	267	390	179	488	188
Wayne .....			35	210		
The State .....	16,524	219	17,824	186	19,159	195

## DIRECTORY OF MINES.

### BROOKE COUNTY.

Mines.	Operators.	P. O. Addresses.
Cooper .....	Cooper Coal Co. ....	Short Creek.
Wellsburg .....	Forbes, Carmichael & Co. ....	Wellsburg.
Blanche .....	Blanche Coal Co. ....	Standard.

### FAYETTE COUNTY.

Alaska .....	Alaska C. & C. Co. ....	Claremont.
Ansted .....	Gauley Mountain Coal Co. ....	Ansted.
Ballingier .....	Ballingier C. & C. Co. ....	Winona.
Boone .....	Boone " .....	"
Beechwood .....	Beechwood " .....	Claremont.
Echo .....	William Beury Cooper & Co. ....	Beury.
Caperton .....	" .....	"
Carver .....	Carver Brothers .....	Edgewater.
Central .....	Central Coal Co. ....	Fire Creek.
Collins .....	Collins Colliery Co. ....	Glen Jean.
Crescent .....	W. R. Johnson .....	Crescent.
Dimmock .....	Dimmock C. & C. Co. ....	River View.
Diamond .....	Wyant " .....	Eagle.
Eagle .....	" .....	"
Dun Loup .....	Dun Loup " .....	Glen Jean.
Electric .....	Thurmond Coal Co. ....	Staunton, Va.
Elmo .....	W. A. Burke " .....	"
Eureka .....	M. T. Davis & Co. ....	Eureka.
Fayette .....	Fayette C. & C. Co. ....	Fayette Station.
Fire Creek .....	Fire Creek " .....	Staunton, Va.
Gaymont .....	Deitz & Masterson C. & C. Co. ....	Hawk's Nest.
Great Kanawha .....	Great Kanawha Colliery Co., Ltd. ....	Mount Carbon.
Hanev .....	Hanev C. & C. Co. ....	Glen Jean.
Keenys Creek .....	Nuttallburg C. & C. Co. ....	Nuttallburg.
Keystone .....	Beechwood " .....	Claremont.
Masters .....	Masters " .....	Winona.
Mecca .....	Mecca " .....	Montgomery.
McDonald .....	McDonald Colliery Co. ....	Glen Jean.
New River .....	New River Coke Co. ....	Staunton, Va.
Nuttallburg .....	Nuttallburg C. & C. Co. ....	Nuttallburg.
Powellton .....	Mount Carbon Co., Ltd. ....	Powellton.
Quinnimont .....	Quinnimont C. & I. Co. ....	Quinnimont.
Rush Run, No. 1 .....	Rush Run C. & C. Co. ....	Rush Run.
Red Ash .....	Red Ash Coal Co. ....	"
Finlow .....	Brooklyn " .....	"
Cunard .....	Cunard " .....	"
Rothwell .....	Rothwell " .....	Nuttallburg.
Saint Clair .....	St. Clair " .....	Eagle.
Slater Creek .....	Sterling C. & C. Co. ....	Coit.
Star .....	Star " .....	Glen Jean.
Stone Cliff .....	Beury " .....	Stone Cliff.
Coal Valley .....	Coal Valley Mining Co. ....	Montgomery.
Sunnyside .....	Thomas Coke Co. ....	Hawk's Nest.

### HARRISON COUNTY.

Despard .....	Despard Gas Coal Co. ....	Clarksburg.
Briar Hill .....	Briar Hill C. & C. Co. ....	Fairmont.
Findley & Whitehead .....	Findley & Whitehead .....	Clarksburg.
Howard .....	Howard C. & C. Co. ....	Baltimore, Md.
Mount Clare .....	Mount Clare Coal Co. ....	Mt. Clare.
Farnham .....	West Fork C. & C. Co. ....	Farnham.
Glen Falls .....	Glen Falls " .....	"

## COMMISSIONER OF LABOR.

## KANAWHA COUNTY.

Belmont.....	Belmont Coal Co.....	Crown Hill.
Black Band.....	Black Band Mining & Mfg Co.....	Spring Hill.
Black Diamond.....	Peel Splint Coal Co.....	Lewiston.
East Bank.....	East Bank C. & C. Co.....	East Bank.
Campbell's Creek.....	Campbell's Creek Coal Co.....	Malden.
Cannelton.....	Cannelton Coal Co.....	Cannelton.
Cedar Grove.....	Cedar Grove Mining Co.....	Cedar Grove.
Chesapeake.....	Chesapeake ".....	Handley.
Coalburg.....	Robinson Coal Co.....	Coalburg.
Consolidated.....	Consolidated Mining Co.....	Union Mines.
Crown Hill.....	N. Y. & W. Va. C. & I. Co.....	Crown Hill.
Dickinson.....	J. Q. Dickinson & Co.....	Malden.
Lewiston.....	Lewiston Coal Co.....	Lewiston.
Peabody.....	Peabody ".....	Shrewsbury.
Peerless.....	S. W. Baird.....	Cincinnati, O.
Monarch, Nos. 1 & 2.....	Monarch Coal Co.....	Monarch.
Stevens.....	Stevens ".....	Coalburg.
Aome.....	" ".....	"
Keystone.....	" ".....	"
Union.....	Union ".....	Union Mines.
Winifrede.....	Winifrede ".....	Winifrede.

## LOGAN COUNTY.

Logan.....	Logan Consolidated Coal Co.....	Matewan.
Pearl.....	Pearl Mining Co.....	Dingess.

## MARION COUNTY.

Aurora.....	Newburgh Orrel C. & C. Co.....	Baltimore, Md.
Central.....	Oliver Jackson.....	Fairmont.
Gaston.....	Gaston Gas Coal Co.....	"
Monongah, Nos. 12 & 3.....	Monongah C. & C. Co.....	"
Montana.....	Montana ".....	"
Clements.....	Poole ".....	Scottdale.
King.....	Va. & Pittsburg ".....	Fairmont.
Irishard.....	Clark ".....	"
Palatine.....	Newburgh Orrel ".....	Baltimore, Md.
West Fairmont.....	West Fairmont ".....	Fairmont.

## MARSHALL COUNTY.

Roggs Run.....	Boggs Run Mng & Mfg. Co.....	Wheeling.
Moundsville.....	Moundsville Coal Co.....	Moundsville.
Glendale.....	Glendale ".....	Glendale.

## MASON COUNTY.

California.....	Jubling Coal Co.....	Hartford City.
Camden.....	Consumers' Coal & Mng Co.....	Spillman.
New Haven.....	".....	"
Flint Hill.....	S. M. Flesher.....	New Haven.
Hartford.....	Hartford City Salt Co.....	Hartford City.
Hope.....	Hope Salt & Coal Co.....	Mason.
Liverpool.....	Liverpool Salt & Coal Co.....	Hartford City.
McDaniels.....	Pierce Brothers.....	"
Sterling.....	Sterling Coal Co.....	Clifton.

## MCDOWELL COUNTY.

Crozier.....	Crozier C. & C. Co.....	Elhorn.
Algoma.....	Algoma ".....	Algoma.
Arlington.....	Arlington ".....	"
Gilliam.....	Gilliam ".....	Gilliam.
Bottom Creek.....	Bottom Creek ".....	Vivian.
Elkhorn.....	Elkhorn ".....	Mayberry.
Empire.....	Empire ".....	Landgraff.
Elk Ridge.....	Elk Ridge ".....	Algoma.
Houston.....	Houston ".....	Elkhorn.
Keystone.....	Keystone ".....	Keystone.

# COAL.

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Eureka.....	Eureka	"	.....	Eckman.
Norfolk.....	Norfolk	"	.....	Maybeury.
Lick Branch.....	"	"	.....	"
Angle.....	"	"	.....	"
Delta.....	"	"	.....	"
McDowell.....	McDowell	"	.....	McDowell.
Powhatan.....	Powhatan	"	.....	Powhatan.
Lynchburg.....	Lynchburg	"	.....	Kyle.
Peerless.....	Peerless	"	.....	Glausen.
Roanoke.....	Roanoke	"	.....	Vivian.
Shamokin.....	Shamokin	"	.....	Maybeury.
Shawnee.....	Shawnee	"	.....	Fckmau.
Tidewater.....	Tidewater	"	.....	Vivian.
King George.....	Greenbrier	"	.....	McDowell.
Turkey Gap.....	Turkey Gap	"	.....	Ennis.
Upland.....	Upland	"	.....	Eikhorn.
Pulaski.....	Pulaski Iron Co.	"	.....	Langraff.
Rolfe.....	Rolfe C. & C. Co.	"	.....	Jones.

## MERCER COUNTY.

Buckeye.....	Buckeye	C. & C. Co	.....	Freeman.
Caswell.....	Caswell Creek	"	.....	"
Hemlock.....	"	"	.....	"
Coaldale.....	Coaldale	"	.....	Coopers.
Sterling.....	Mill Creek	"	.....	"
Goodwill.....	Goodwill	"	.....	Goodwill.
Louisville.....	Louisville	"	.....	"
Pocahontas.....	{ Southwest Virginia Improvement Co. ....		{	Pocahontas, Va.
East.....	{ Booth Bowen C. & C. Co. ....		{	Freeman.
Reliance.....				

## MINERAL COUNTY.

Atlantic.....	{ Atlantic & George's Creek } .....		{	Baltimore, Md.
Hampshire.....	{ Consolidated Coal Co		{	Piedmont.
Pierce.....	Davis C. & U. Co			Elk Garden.
Elk Garden.....	Big Vein Coal Co.			"
	West Va. Central & Pittsburg Ry. Co.			

## MONONGALIA COUNTY.

Acme.....	Acme C. & C. Co.	.....	Opekiska.
Beechwood.....	Hutchinson C. & C. Co.	.....	Beechwood.

## OHIO COUNTY.

Elm Grove.....	Elm Grove Coal Co.	.....	Elm Grove.
Whitaker.....	T. E. Kasley & Son.	.....	Wheeling.
Manchester.....	"	.....	"

## PRESTON COUNTY.

Austin.....	Austin Coke Works	.....	Austin.
Scotch Hill.....	Newburgh Orrel C. & C. Co.	.....	Baltimore, Md.
Oakland.....	Oakland C. & C. Co.	.....	Oakland.
Hillside.....	Hillside C. & C. Co.	.....	Tunnelton.

## PUTNAM COUNTY.

Bancroft.....	Kanawha & Lake Erie Coal Co.	.....	Bancroft.
Florence.....	The Marmet Co.	.....	Raymond City.
Plymouth.....	Carver Coal Co.	.....	Plymouth.
Queen City.....	Queen City Coal Co.	.....	Queen City.

## RALEIGH COUNTY.

Prince.....	Royal C. & C. Co.	.....	Prince.
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## COMMISSIONER OF LABOR.

## TAYLOR COUNTY.

Simpson.....	Simpson Gas Coal Co.....	Grafton
Tyrconnel.....	Newburgh Orrel C. & C. Co .....	Baltimore, Md.

## TUCKER COUNTY.

Davis No. 1.....	Davis C. & C. Co.....	Baltimore, Md.
Coketon No. 2.....	" " .....	"
Thomas .....	" " .....	"
Douglass .....	Cumberland Coal Co.....	Coketon.

## WAYNE COUNTY.

Dunlow .....	Dunlow Coal Co.....	Dunlow.
Coaldale.....	Coaldale Mining & Manufacturing Co.....	Fleming.

## MINES OMITTED FROM PROPER PLACE IN DIRECTORY.

## LOGAN COUNTY.

Mines.	Operators.	P. O. Address.
Thacker .....	Thacker Coal Co.....	Kenova.

## McDOWELL COUNTY.

Indian Ridge.....	Indian Ridge C. & C. Co.....	Jones.
Ashland.....	Ashland C. & C. Co.....	McDowell.



## THE COAL FIELDS OF THE UNITED STATES.

For convenience the coal areas of the United States are divided into two great classes, the anthracite and bituminous.

In a commercial sense, particularly in the East, when the anthracite fields are mentioned the fields of Pennsylvania are considered, though Colorado and New Mexico are now supplying anthracite coal of good quality to the Rocky Mountain region, and small amounts are mined annually in Virginia. This small quantity from Virginia and a semi-anthracite product from Arkansas are considered with the bituminous output. In previous years some coal which was classed as anthracite has been mined and sold in New England. The productive area was confined to the eastern part of Rhode Island and the counties of Bristol and Plymouth in Massachusetts. The classing of this product as anthracite coal was erroneous. The original beds have been metamorphosed into graphite or graphitic coal, and the product requires such a high degree of heat for combustion that it can be used only with other combustible material or under a heavy draft. It is therefore, not an economical practice to use this product for fuel in competition with the anthracite coal from Pennsylvania or the bituminous coals from the New River and Pocahontas fields, which are now sent in large quantities to New England points, and its mining for fuel purposes has been abandoned.

The Bituminous division includes the following coal fields: (1) The Triassic field, embracing the coal beds of the Triassic or New Red Sandstone formation in the Richmond basin in Virginia and in the coal basins along the Deep and Dan rivers in North Carolina; (2) the Appalachian field, which extends from the State of New York on the north to the State of Alabama on the south, having a length northeast and southwest of over 900 miles and a width ranging from 30 to 180 miles; (3) the Northern field, which is confined exclusively to the central part of Michigan; (4) the Central field, embracing the coal areas in Indiana, Illinois, and western Kentucky; (5) the Western field, including the coal areas west of the Mississippi River, south of the forty third parallel of north latitude and east of the Rocky Mountains; (6) the Rocky Mountain field, containing the coal areas in the States and Territories lying along the Rocky Mountains; (7) the Pacific coast field, embracing the coal districts of Washington, Oregon, and California.

The various fields are described at some length in Mineral Resources for 1886, and also in the report for 1894. The latter also contains some historical information regarding the development of these fields. Mineral Resources for 1892 contains some interesting contributions from State geologists on the coal fields of several States.

The following table contains the approximate areas of the coal fields in the various States, grouped according to the divisions mentioned, with the total output from each from 1887 to 1895.

TABLE NO. 10.

*Classification of the coal fields of the United States.*

	Area.	Product in—		
		1887	1888	1889
<i>Anthracite.</i>	<i>Sq. miles.</i>	<i>Short tons.</i>	<i>Short tons.</i>	<i>Short tons.</i>
New England (Rhode Island and Massachusetts).....	500	6,100	4,000	2,000
Pennsylvania.....	480	39,506,255	43,922,897	45,544,970
Colorado and New Mexico.....	15	86,000	44,791	53,517
	995	39,548,255	43,971,688	45,600,487
<i>Bituminous. (a)</i>				
Triassic:				
Virginia.....	180	30,000	33,000	49,111
North Carolina.....	2,700			222
Appalachian:				
Pennsylvania.....	9,000	30,866,602	30,796,727	36,174,089
Ohio.....	10,000	10,301,708	10,910,916	9,978,787
Maryland.....	550	3,278,023	3,479,470	2,939,715
Virginia.....	2,000	795,263	1,040,000	818,375
West Virginia.....	16,000	4,836,820	5,498,400	6,231,880
Kentucky.....	11,180	950,903	1,193,000	1,108,770
Tennessee.....	5,100	1,900,000	1,667,297	1,925,609
Georgia.....	200	313,715	180,000	225,934
Alabama.....	8,660	1,950,000	2,900,000	3,572,983
	62,690	55,193,034	60,966,240	62,972,222
Northern:				
Michigan.....	6,700	71,461	81,407	67,431
Central:				
Indiana.....	6,450	3,217,711	3,140,979	2,845,057
Kentucky.....	4,500	982,282	1,377,000	1,290,985
Illinois.....	36,800	10,278,890	14,655,188	12,104,272
	47,750	14,478,883	19,173,167	16,240,314
Western:				
Iowa.....	18,000	4,473,828	4,952,440	4,045,358
Missouri.....	26,700	3,209,916	3,909,967	2,557,823
Nebraska.....	3,200	1,500	1,500	2,222,443
Kansas.....	17,050	1,596,879	1,850,000	
Arkansas.....	9,100	150,000	276,871	279,584
Indian Territory.....	20,000	685,911	761,986	752,832
Texas.....	4,500	75,000	90,000	128,216
	98,500	10,193,034	11,842,764	10,036,256
Rocky Mountain, etc.:				
Dakota.....		21,470	34,000	28,907
Montana.....		10,202	41,467	363,301
Idaho.....		500	400	
Wyoming.....		1,170,318	1,481,540	1,368,947
Utah.....		180,021	258,961	236,651
Colorado.....	2,913	1,735,735	2,140,686	2,544,144
New Mexico.....		508,034	626,665	486,463
		3,646,280	4,583,719	5,048,413
Pacific Coast:				
Washington.....		772,612	1,215,750	1,030,578
Oregon.....		31,696	75,000	61,359
California.....		50,000	95,000	119,820
		854,308	1,385,750	1,211,757
Total product sold.....		124,015,255	142,037,735	
Colliery consumption.....		5,960,302	6,621,667	
Total product including colliery consumption.....		129,975,557	148,659,402	141,229,513

*a Including lignite, brown coal, and scattering lots of anthracite.*

TABLE No. 10.—*Continued.**Classification of the coal fields of the United States.—Continued.*

	Product in—		
	1890	1891	1892
<i>Anthracite.</i>	<i>Short tons.</i>	<i>Short tons.</i>	<i>Short tons.</i>
New England (Rhode Island and Massachusetts).....		500	
Pennsylvania.....	46,468,641	50,665,431	52,472,504
Colorado and New Mexico.....	(b)	(b)	61,963
	46,468,641	50,665,931	52,537,467
<i>Bituminous (a).</i>			
Triassic:			
Virginia.....	19,316	17,290	37,219
North Carolina.....	10,262	23,355	6,679
Appalachian:			
Pennsylvania.....	42,302,173	42,788,490	46,694,576
Ohio.....	11,484,506	12,868,683	13,562,927
Maryland.....	3,357,813	3,820,239	3,419,962
Virginia.....	761,665	719,109	637,986
West Virginia.....	7,394,494	9,220,665	9,738,755
Kentucky.....	1,206,120	1,222,918	1,233,110
Tennessee.....	2,169,585	2,413,678	2,092,064
Georgia.....	228,337	171,000	215,498
Alabama.....	4,600,409	4,759,781	5,529,312
	73,003,102	77,984,563	83,122,190
Northern:			
Michigan.....	71,977	80,307	77,990
Central:			
Indiana.....	3,305,737	2,973,474	3,345,174
Kentucky.....	1,495,376	1,693,151	1,794,203
Illinois.....	15,292,420	15,660,668	17,862,276
	20,093,533	20,327,233	23,001,653
Western:			
Iowa.....	4,021,739	3,825,495	3,918,491
Missouri.....	2,735,221	2,674,606	2,733,949
Nebraska.....		1,500	1,500
Kansas.....	2,259,922	2,716,705	3,007,276
Arkansas.....	599,888	542,379	635,558
Indian Territory.....	869,229	1,091,032	1,192,721
Texas.....	184,440	172,100	245,690
	10,470,439	11,023,817	11,635,185
Rocky Mountain, etc.:			
Dakota.....	30,000	30,000	40,725
Montana.....	517,477	541,861	564,648
Idaho.....			
Wyoming.....	1,870,366	2,327,841	2,503,839
Utah.....	318,159	371,045	361,013
Colorado.....	3,091,003	3,522,632	3,447,967
New Mexico.....	375,777	462,323	659,230
Nevada.....			
	6,205,782	7,245,707	7,577,422
Pacific Coast:			
Washington.....	1,263,689	1,056,249	1,213,427
Oregon.....	61,514	51,826	34,661
California.....	110,711	93,301	85,178
	1,435,914	1,201,376	1,333,266
Total product, including colliery consumption.....	157,788,656	168,566,669	179,329,071

a Including lignite, brown coal, and scattering lots of anthracite.

b Included in bituminous product.

TABLE NO. 10.—Continued.

*Classification of the coal fields of the United States—Continued.*

	Product in—		
	1893	1894	1895
<i>Anthracite.</i>	<i>Short tons.</i>	<i>Short tons.</i>	<i>Short tons</i>
New England (Rhode Island and Massachusetts).....	53,967,543	51,921,121	57,999,337
Pennsylvania.....	93,578	71,550	67,179
Colorado and New Mexico.....	53,061,121	51,992,671	58,066,516
<i>Bituminous (a).</i>			
Triassic:			
Virginia.....	19,878	52,079	57,782
North Carolina.....	17,000	16,900	21,900
Appalachian:			
Pennsylvania.....	44,070,724	39,924,463	50,217,228
Ohio.....	13,253,646	11,909,856	13,355,806
Maryland.....	3,716,041	3,501,428	3,915,545
Virginia.....	800,461	1,177,004	1,310,542
West Virginia.....	10,708,578	11,627,757	11,387,981
Kentucky.....	1,245,785	1,218,072	1,490,057
Tennessee.....	1,902,254	2,180,479	2,535,644
Georgia.....	372,740	354,111	260,998
Alabama.....	5,136,935	4,397,178	5,093,775
	81,207,168	76,278,748	90,167,596
Northern:			
Michigan.....	45,979	70,022	112,312
Central:			
Indiana.....	3,791,851	3,423,921	3,995,892
Kentucky.....	1,761,344	1,893,120	1,867,713
Illinois.....	19,949,564	17,113,576	17,735,864
	25,502,909	22,430,617	23,599,469
Western:			
Iowa.....	3,972,229	3,967,253	4,156,074
Missouri.....	2,897,442	2,245,039	2,372,393
Nebraska.....			
Kansas.....	2,652,546	3,388,251	2,926,870
Arkansas.....	574,763	512,626	598,322
Indian Territory.....	1,252,110	969,606	1,211,185
Texas.....	302,206	420,848	484,959
	11,651,296	11,503,623	11,749,803
Rocky Mountain, etc.:			
Dakota.....	49,630	42,015	39,197
Montana.....	892,309	927,395	1,501,193
Idaho.....			
Wyoming.....	2,439,311	2,417,463	2,246,911
Utah.....	413,205	431,550	471,836
Colorado.....	4,018,793	2,776,817	3,027,327
New Mexico.....	655,112	580,238	769,130
Nevada.....		150	
	8,468,360	7,175,628	7,998,594
Pacific Coast:			
Washington.....	1,264,877	1,106,470	1,191,410
Oregon.....	41,683	47,521	73,685
California.....	72,603	67,247	75,453
	1,379,163	1,221,238	1,340,548
Total product, including colliery consumption.....	182,352,774	170,741,526	193,117,530

*a Including ignite, brown coal, and scattering lots of anthracite.*

## PRODUCTION.

The output from the coal mines of the United States in 1895 exceeded that of any previous year in the history of the country, aggregating 172,426,366 long tons, equivalent to 193,117,530 short tons. This was an increase of 22,376,004 short tons over the product of 1894, or an advance of about 13 per cent. The year of largest production previous to 1895 was 1893, when 182,352,774 short tons were mined. The output of 1895 exceeded this by about 10,000,000 tons, or a little more than 5 per cent. In considering the coal product these reports include not only the coal marketed, either by shipment to distant points or sold locally, but also that consumed by the mine employees and and by the mine operators themselves in locomotives, under stationary boilers, etc., in working the mine, and technically known as colliery consumption. There are occasionally exceptions, where operators use only slack or waste, which would otherwise be thrown on the dump and no record kept, the miner not even being paid for it. These exceptions are few and the amount so comparatively small as not to materially affect the total. Coal consumed in the manufacture of coke is also included in this report.

Excluding the colliery consumption, the product in 1895 was 169,389,630 long tons, or 189,716,386 short tons. This may be and usually is considered the marketable product.

Coincident with the increased production of coal in 1895, it is interesting to note the activity which prevailed in all branches of the iron and steel industry which have a direct bearing upon the demand for and the production of coal. The production of pig iron according to the annual report of the American Iron and Steel Association, increased from 6,657,388 long tons in 1894 to 9,446,308 long tons in 1895. Assuming the consumption of coal to be  $1\frac{1}{2}$  tons for each ton of pig iron produced, an increased production of coal to the amount of over 4,500,000 short tons is at once accounted for. But there was also an increased production of Bessemer and open-hearth steel, steel rails, structural iron and steel, plates and sheets, wire rods and nails, and in fact of all iron and steel products, with the exception of cut nails, which have been declining rapidly and steadily for several years. This increased activity had direct effect upon the coal production, but it cannot satisfactorily account for the comparative decline in the value of the coal product, which, while the output increased about 22,000,000 tons, only advanced about \$11,000,000, and was about \$10,000,000 less than in 1892, when the product was 13,000,000 tons less than it was in 1895. How, in the face of such seemingly prosperous conditions, is the falling off in value to be accounted for?

The fact is that prices for bituminous coal have been on the decline since 1888, though in 1890, 1891, and 1892 they were about the same. In 1893 and 1894 they were lower than in any previous

year of which we have any record. Similar conditions affected the other "raw materials" used in the manufacture of iron and steel. Mr. James M. Swank, in his Review of the American Iron Trade, states that in the depression of 1893, 1894, and the first half of 1895 "the best furnace coke this country can produce was sold on cars at 85 cents per ton of 2,000 pounds, and the best Lake Superior Bessemer ores were sold at less than \$3 per gross ton delivered at Cleveland." This naturally allowed the finished products to be sold at greatly reduced prices, and it is fair to suppose that the increased demand for iron and steel products in 1895 was rather due to low prices than indicative of a healthier condition of trade. The fact that the year closed with slackened demand and reduced prices rather tends to this belief. The trade which had been developed by prices favorable to buyers fell off when values were advanced, and the year passes into history as one with the largest production in iron, steel, and coal, but one of very little, if any, profit to the producers.

#### ANTHRACITE.

The product of Pennsylvania anthracite in 1895 was 51,785,122 long tons, or 57,999,336 short tons, valued at \$82,019,272. This was the largest output ever obtained, being 5,426,978 long tons, or about 11 per cent, in excess of that of 1894, and 3,599,816 long tons more than in 1893, the year of largest previous production. The value in 1895, however, while greater than that of 1894, was comparatively less, and there were four years prior to 1895 when, with a smaller output, the value was in excess of the year just closed. These years were 1887 (\$84,552,181), 1888 (\$89,020,483), 1892 (\$82,442,000), and 1893 (\$85,687,078). The average price per ton, obtained by dividing the total value by the total product, was \$1.69 per long ton in 1894 and \$1.58 in 1895, a decline of 11 cents. In quoting the average price per ton of anthracite, however, the item of colliery consumption is excluded as not having any value, only the marketable product being considered. The average price for the marketable grades was \$1.85 in 1894 and \$1.72 in 1895, a decline of 13 cents. In 1893 this average price was \$1.94. Two reasons may be assigned for this decline, both of which probably had some effect—one the general depression in values, whose influence was felt in all branches of trade; the other the increased use of the smaller sizes of anthracite, which are sold at lower prices, and cause a comparative decrease in the total value of the coal marketed. As these sizes were previously a waste product and have now become a source of revenue, there is, in the product affected, an increased profit from the coal mined, though a decreased value for the coal marketed.

The number of men employed in the anthracite mines in 1895 was 142,917, who averaged 196 working days, against 131,603 men for 190 days in 1894.

In addition to the anthracite production of Pennsylvania in 1895

there were 67,179 short tons mined in Colorado and New Mexico, making the total output of anthracite coal in the United States 58,066,516 short tons. Except in the preceding tables, the anthracite product of Colorado and New Mexico, for sake of convenience, is included in the bituminous product, and, unless expressly stated to the contrary, reference in this chapter to anthracite production means that of Pennsylvania only.

#### BITUMINOUS.

The production of bituminous coal in 1895 (including lignite, brown coal, and scattering lots of anthracite, as previously mentioned) was 135,118,193 short tons, valued at \$115,779,771, compared with 118,820,405 short tons, valued at \$107,653,501, in 1894, indicating an increase in product of 16,297,788 short tons, or 14 per cent, and in value of \$8,126,270, or 8 per cent. The conditions affecting the industry in 1895, and to which may be attributed the increase in product and comparative decrease in value, have already been discussed.

Among the more important coal-producing States nearly the same relative positions were maintained in 1895 as were held in 1894. Pennsylvania of course comes first, with about 37 per cent of the total bituminous product - but including her anthracite product, Pennsylvania produced 57 per cent of the total coal output. Illinois, second, contributed 13 per cent of the bituminous product and 9 per cent of the total. Ohio, third, produced 10 per cent of the bituminous output and 7 per cent of the total. West Virginia, fourth, yielded 7.5 per cent and 6.9 per cent, respectively. Alabama, fifth, produced 4.2 per cent of the bituminous output; and Iowa, yielding 3.1 per cent, ranked sixth. Indiana replaces Maryland for seventh place, each having a little less than 3 per cent. Kentucky and Colorado each advance one point, into ninth and tenth places, respectively, while Kansas falls from ninth to eleventh.

The total number of men employed in the bituminous coal mines in 1895 was 239,962, averaging 194 working days, against 244,603 employees for 171 days in 1894.

TABLE NO. 11.

The following tables exhibit the production of all kinds of coal in the United States during 1894 and 1895 :

*Coal product of the United States in 1894 by states.*

State or Territory.	Loaded at mines for shipment.	Sold to local trade and used by employees.	Used at mines for steam and heat.	Made into coke.
	<i>Short tons.</i>	<i>Short tons</i>	<i>Short tons.</i>	<i>Short tons.</i>
Alabama.....	3,269,548	43,911	130,404	953,315
Arkansas.....	488,077	7,870	16,679	
California.....	52,736	8,113	6,368	
Colorado.....	2,181,048	56,688	112,414	481,259
Georgia.....	178,610		8,978	166,523
Illinois.....	13,948,910	2,590,414	570,452	3,800
Indiana.....	3,085,664	248,398	67,545	22,314
Indian Territory.....	923,581	4,632	30,878	10,515
Iowa.....	3,390,751	511,684	64,419	
Kansas.....	3,066,398	275,565	45,523	765
Kentucky.....	2,734,847	281,235	47,344	47,766
Maryland.....	3,435,600	51,750	14,078	
Michigan.....	60,817	7,055	2,150	
Missouri.....	1,955,255	242,501	47,283	
Montana.....	861,171	12,900	17,324	36,000
Nevada.....		150		
New Mexico.....	561,523	8,266	14,365	13,042
North Carolina.....	13,500	1,000	2,400	
North Dakota.....	37,311	4,480	224	
Ohio.....	10,636,402	1,101,940	126,397	45,117
Oregon.....	45,088	2,171	282	
Pennsylvania.....	29,722,803	1,589,595	342,294	8,257,771
Tennessee.....	1,571,406	59,985	28,993	520,495
Texas.....	417,241	2,412	1,155	
Utah.....	364,675	11,173	6,892	48,810
Virginia.....	1,015,713	21,162	4,690	187,508
Washington.....	1,030,232	10,822	56,853	8,563
West Virginia.....	9,116,314	428,202	64,126	2,019,115
Wyoming.....	2,309,934	21,482	72,362	13,685
Total.....	96,475,175	7,605,585	1,903,272	12,836,373
Pennsylvania anthracite.....	46,358,144	1,158,953	4,404,024	
Grand total.....	142,833,319	8,764,538	6,807,296	12,836,373



TABLE NO. 12.

*Coal product of the United States in 1894, by States—Continued.*

State or Territory.	Total product.	Total value.	Average price per ton.	Average number of days active.	Average number of employees.
	<i>Short tons.</i>				
Alabama .....	4,397,178	\$ 4,085,535	\$0.93	238	10,859
Arkansas .....	512,626	631,988	1.22	134	1,493
California .....	67,247	155,620	2.31	232	125
Colorado .....	2,831,409	3,516,340	1.24	155	6,507
Georgia .....	354,111	299,250	.85	304	729
Illinois .....	17,113,576	15,282,111	.89	183	38,477
Indiana .....	3,423,921	3,295,034	.96	149	8,603
Indian Territory .....	969,606	1,541,293	1.59	157	3,101
Iowa .....	3,967,253	4,997,989	1.26	170	9,995
Kansas .....	3,348,251	4,178,998	1.23	164	7,339
Kentucky .....	3,111,192	2,749,932	.88	145	8,083
Maryland .....	3,511,428	2,687,270	.77	215	3,974
Michigan .....	70,022	103,049	1.47	224	223
Missouri .....	2,245,039	2,644,564	1.17	138	7,523
Montana .....	927,395	1,887,390	2.04	192	1,782
Nevada .....	150	475	3.15	60	2
New Mexico .....	597,196	935,857	1.57	182	985
North Carolina .....	16,900	29,675	1.76	145	95
North Dakota .....	42,015	47,049	1.12	156	77
Ohio .....	11,909,836	9,841,723	.83	136	27,105
Oregon .....	47,521	183,914	3.87	243	88
Pennsylvania .....	39,912,463	29,479,820	.74	165	75,010
Tennessee .....	2,180,879	2,119,481	.97	210	5,542
Texas .....	420,848	976,458	2.32	283	1,062
Utah .....	431,550	613,479	1.40	199	671
Virginia .....	1,229,083	933,576	.76	234	1,635
Washington .....	1,116,470	2,578,441	2.33	207	2,662
West Virginia .....	11,627,757	8,706,808	.75	186	17,824
Wyoming .....	2,417,463	3,170,392	1.31	190	3,032
Total .....	118,820,405	107,653,531	.91	171	244,603
Pennsylvania anthracite .....	51,921,121	78,488,063	1.85	190	131,603
Grand total .....	170,741,526	186,141,564	1.09	178	376,206

## COMMISSIONER OF LABOR.

TABLE NO. 13.

*Coal product of the United States in 1895, by States.*

State or Territory.	Number of mines.	Loaded at mines for shipment.	Sold to local trade and used by employees.	Used at mines for steam and heat.	Made into coke.
		<i>Short tons.</i>	<i>Short tons.</i>	<i>Short tons.</i>	<i>Short tons.</i>
Alabama.....	60	3 610,433	272 551	137,021	1,673 770
Arkansas.....	13	576 112	14,935	7,275	
California.....	5	60 440	12 171	2,842	
Colorado.....	87	2,445 578	49,088	99,055	489 261
Georgia.....	2	135 692	150	6 256	118,900
Illinois.....	a 319	14,456,624	2,674,677	591,133	3 600
Indiana.....	113	3,488 876	392,423	104,695	9,898
Indian Territory.....	16	1,173,399	3,070	21,935	12,781
Iowa.....	177	3,630,767	469 820	64,387	
Kansas.....	106	2,587,602	279 739	59,142	287
Kentucky.....	120	3,012,610	254,028	50 294	40,838
Maryland.....	23	3,840,991	59,950	11,644	
Michigan.....	9	80,403	27,719	4,900	
Missouri.....	122	2,104,452	231 090	26,851	
Montana.....	22	1,404,662	19 168	20,463	59 700
New Mexico.....	21	695,634	13,045	11,292	683
North Carolina.....	3	23 400	600	900	
North and South Dakota.....	9	35,320	3 817		
Ohio.....	407	11,933,086	1,227,224	152,277	42,619
Oregon.....	5	68,104	5,294	293	
Pennsylvania.....	588	35,164,453	1,732,803	468,381	12,851,591
Tennessee.....	44	1,808,056	51 923	25,477	650,188
Texas.....	14	475 157	7,705	2 197	
Utah.....	14	376,459	25,097	7 253	63,027
Virginia.....	22	1,024,000	15,173	22 338	306,613
Washington.....	22	1 106 898	16,320	43 249	22,973
West Virginia.....	189	8,858,256	445,023	50,195	2,034,067
Wyoming.....	25	2,106,937	35,628	81, 65	24,281
Total.....	2,555	106,287,435	8,340,461	2,083,100	18,404,197
Pennsylvania anthracite ..	349	52,092,854	1,315,044	4,591,439	
Grand total.....	2,904	158 380 289	9,655,505	6,677,539	18,404,197

a Shipping mines. The product includes also the output from 517 local mines.

TABLE NO. 14.

*Coal product of the United States in 1895, by States—Continued.*

State or Territory.	Total product.	Total Value.	Average price per ton.	Average number of days active.	Average number of employees.
	<i>Short tons.</i>				
Alabama.....	5,693,775	\$5,126,822	\$0.90	244	10,346
Arkansas.....	594,322	751,156	1.25	176	1,218
California.....	75,453	175,778	2.33	262	190
Colorado.....	3,082,942	3,675,145	1.20	182	6,125
Georgia.....	260,998	215,863	.83	312	848
Illinois.....	17,735,864	14,239,157	.80	182	38,630
Indiana.....	3,945,892	3,642,623	.91	189	8,530
Indian Territory.....	1,211,145	1,737,254	1.43	164	3,212
Iowa.....	4,156,074	4,982,102	1.20	189	10,066
Kansas.....	2,926,870	3,481,981	1.20	159	7,482
Kentucky.....	3,357,771	2,890,247	.86	146	7,865
Maryland.....	3,915,585	3,160,592	.81	248	3,912
Michigan.....	112,322	180,016	1.60	186	340
Missouri.....	2,372,393	2,651,612	1.12	163	6,299
Montana.....	1,504,193	2,850,906	1.89	223	2,184
New Mexico.....	730,654	1,072,520	1.49	190	1,383
North Carolina.....	24,000	41,350	1.66	225	61
North and South Dakota.....	39,197	42,046	1.07	139	65
Ohio.....	13,355,446	10,618,477	.79	176	24,644
Oregon.....	73,685	247,901	3.36	69	414
Pennsylvania.....	50,217,224	35,980,357	.72	206	71,130
Tennessee.....	2,535,644	2,349,032	.93	224	5,120
Texas.....	481,959	913,138	1.88	171	1,612
Utah.....	471,836	617,349	1.31	203	670
Virginia.....	1,368,324	869,873	.63	225	2,158
Washington.....	1,191,410	2,577,958	2.16	221	2,840
West Virginia.....	11,387,961	7,710,575	.68	185	19,159
Wyoming.....	2,246,911	2,977,901	1.33	184	3,449
Total.....	135,118,193	115,779,771	.86	194	239,942
Pennsylvania anthracite.....	57,999,337	82,019,272	1.41	196	142,917
Grand Total.....	193,117,531	197,799,043	1.02	195	382,879

## Production in Previous Years.

The following table shows the annual production of anthracite and bituminous coal since 1880. The quantities are expressed both in long tons of 2,240 pounds and in short tons of 2,000 pounds.

TABLE NO. 15.

*Annual production of coal in the United States since 1880.*

Year.	Bituminous coal.		
	Long tons of 2,240 pounds.	Short tons of 2,000 pounds.	Value.
1880.....	33,242,641	42,831,759	\$ 53,443,718
1881.....	48,345,341	53,961,012	60,224,344
1882.....	60,861,190	68,164,533	76,076,487
1883.....	68,581,500	76,755,290	82,277,800
1884.....	73,730,539	82,574,204	77,417,669
1885.....	61,840,668	72,621,548	82,347,648
1886.....	65,810,676	73,707,957	78,481,056
1887.....	78,470,857	87,877,360	94,004,636
1888.....	91,106,998	102,039,828	101,890,529
1889.....	85,432,628	95,655,543	94,504,745
1890.....	99,392,871	111,320,016	110,440,811
1891.....	105,268,902	117,601,237	117,188,400
1892.....	113,264,792	126,856,567	125,124,381
1893.....	114,629,671	128,385,231	122,751,618
1894.....	116,089,647	118,820,405	107,653,501
1895.....	120,641,244	135,118,193	115,779,771

Year.	Pennsylvania anthracite.		
	Long tons of 2,240 pounds.	Short tons of 2,000 pounds.	Value.
1880.....	25,580,189	28,649,811	\$ 42,196,678
1881.....	23,500,016	31,920,018	61,125,036
1882.....	31,358,264	35,121,256	70,556,094
1883.....	34,336,469	38,456,845	77,257,055
1884.....	33,175,756	37,156,847	66,351,512
1885.....	34,228,548	38,335,974	76,671,948
1886.....	34,853,077	39,035,446	76,119,120
1887.....	37,578,747	42,088,197	84,552,181
1888.....	41,624,611	46,619,564	89,020,483
1889.....	40,665,152	45,544,970	65,721,578
1890.....	41,489,858	46,468,641	66,383,772
1891.....	45,236,992	50,665,431	73,944,735
1892.....	46,850,450	52,472,504	82,442,000
1893.....	48,145,306	53,567,543	85,687,078
1894.....	46,359,144	51,921,121	78,489,063
1895.....	51,785,122	57,999,337	82,019,272

TABLE NO. 16.

*Annual production of coal in the United States since 1880.*

Year.	Total.		
	Long tons.	Short tons.	Value.
1880.....	63,822,830	71,481,589	95,640,396
1881.....	70,865,357	85,881,030	124,349,380
1882.....	92,219,454	103,285,789	145,632,581
1883.....	102,867,969	115,212,125	159,494,855
1884.....	106,906,295	119,735,051	143,768,578
1885.....	99,069,216	110,957,523	159,019,596
1886.....	100,633,753	112,743,403	154,600,176
1887.....	116,049,604	129,975,557	182,556,837
1888.....	132,731,619	148,659,402	190,881,012
1889.....	126,097,780	141,229,514	160,226,323
1890.....	140,883,729	157,788,657	176,804,573
1891.....	150,505,954	168,566,668	191,133,135
1892.....	160,115,242	179,329,071	207,546,381
1893.....	162,814,977	182,352,774	208,478,696
1894.....	152,447,791	170,741,526	186,141,564
1895.....	172,426,366	193,117,530	197,799,043

The total amount and value of coal produced in the United States, by States, since 1886, is shown in the following table. The amounts in this table are expressed in short tons of 2,000 pounds.

TABLE NO. 17.

*Amount and Value of Coal Produced in the United States, by States and Territories, from 1886 to 1895.*

State or Territory.	1886		1887	
	Product.	Value.	Product.	Value.
	<i>Short tons.</i>		<i>Short tons</i>	
Alabama.....	1,800,000	\$ 5,574,000	1,950,000	\$ 2,535,000
Arkansas.....	125,000	200,000	150,000	252,500
California.....	100,000	300,000	50,000	150,000
Colorado.....	1,308,338	3,215,594	1,791,735	3,941,817
Georgia.....	223,000	334,500	313,715	470,573
Idaho.....	1,500	6,000	500	2,000
Illinois.....	9,216,135	10,261,543	10,278,590	11,152,596
Indiana.....	3,000,000	3,450,000	3,217,711	4,324,604
Indian Territory.....	534,580	855,328	685,911	1,286,692
Iowa.....	4,312,921	5,391,151	4,473,828	5,961,735
Kansas.....	1,400,000	1,600,000	1,566,879	2,235,631
Kentucky.....	1,550,000	1,782,500	1,933,185	2,223,163
Maryland.....	2,517,577	2,391,698	3,278,023	3,114,122
Michigan.....	60,434	90,651	7,461	107,191
Missouri.....	1,800,000	2,340,000	3,209,916	4,298,994
Montana.....	49,546	174,460	10,702	38,707
Nebraska.....			1,500	3,000
New Mexico.....	271,285	813,855	508,034	1,524,102
North Carolina.....				
North Dakota.....	25,955	41,277	21,470	32,205
Ohio.....	8,435,211	8,013,450	10,301,708	9,096,848
Oregon.....	45,000	112,500	31,606	70,000
Pennsylvania:				
Anthracite.....	36,696,475	11,558,126	32,506,255	11,365,244
Bituminous.....	26,160,735	21,016,235	30,869,602	27,808,941
Rhode Island.....			6,000	16,250
Tennessee.....	1,714,290	1,791,434	1,900,000	2,470,000
Texas.....	100,000	185,000	75,000	150,000
Utah.....	200,000	420,000	180,021	360,042
Virginia.....	644,951	684,951	825,263	773,360
Washington.....	423,525	952,931	772,612	1,699,746
West Virginia.....	4,005,796	3,805,506	4,866,820	4,594,979
Wyoming.....	824,306	2,488,065	1,170,318	3,510,954
Total product sold.....	107,682,209	147,112,755	124,015,255	173,595,996
Colliery Consumption.....	5,061,194		5,960,302	8,960,841
Total.....	112,743,403	\$ 147,112,755	129,975,557	\$ 182,556,837

TABLE 17.—Continued.

*Amount and Value of Coal Produced in the United States, etc.—Continued.*

States or Territories.	1888		1889	
	Product	Value.	Product.	Value.
	<i>Short tons.</i>		<i>Short tons.</i>	
Alabama.....	2,900,000	\$ 3 335,000	3,572,983	\$ 3,961,491
Arkansas.....	278,871	415,308	279,584	395,836
California.....	95,000	380,000	181,179	434,382
Colorado.....	2,185,477	4,808,049	2,544,144	3,843,992
Georgia.....	180,000	270,000	226,156	339,382
Idaho.....	400	1,800		
Illinois.....	14,655,188	16,413,811	12,104,272	11,755,203
Indiana.....	3,140,979	4,397,370	2,845,057	2,887,852
Indian Territory.....	761,986	1,432,072	752,832	1,323,807
Iowa.....	4,932,440	6,433,172	4,095,358	5,426,509
Kansas.....	1,850,000	2,775,000	2,220,943	3,297,288
Kentucky.....	2,570,000	3,084,000	2,399,755	2,374,339
Maryland.....	3,479,470	3,293,070	2,969,715	2,517,474
Michigan.....	81,407	135,221	67,431	115,011
Missouri.....	3,909,967	8,650,800	2,557,823	3,479,057
Montana.....	41,467	145,135	363,301	880,763
Nebraska.....	1,500	3,375	1,500	4,500
New Mexico.....	636,665	1,879,995	486,463	870,468
North Carolina.....			(a)	
North Dakota.....	84,000	119,00	24,907	41,431
Ohio.....	10,910,946	10,147,180	9,976,787	9,355,400
Oregon.....	75,000	225,000	(b)	
Pennsylvania:				
Anthracite.....	43,922,897	85,649,649	45,598,487	65,873,514
Bituminous.....	33,796,727	32,106,891	36,174,089	27,953,315
Rhode Island.....	4,000	11,000	2,000	6,000
Tennessee.....	1,967,297	2,164,026	1,925,689	2,338,309
Texas.....	90,000	184,500	128,216	340,620
Utah.....	258,961	543,818	236,651	377,456
Virginia.....	1,073,000	1,073,000	865,786	804,475
Washington.....	1,215,750	3,647,250	1,030,578	2,393,238
West Virginia.....	5,498,800	6,018,630	6,231,880	5,066,584
Wyoming.....	1,481,540	4,444,620	1,388,947	1,748,617
Total product sold.....	142,037,735	204,222,790	141,229,513	160,226,323
Colliery consumption.....	6,621,667	7,295,834		
Total.....	148,659,402	\$ 211,518,624		

a Product included in Georgia.

b Product included in California.

c Includes product of anthracite in Colorado and New Mexico.

TABLE NO. 17.—Continued.

*Amount and value of coal produced in the United States, etc.—Continued.*

State or Territory.	1890.		1891.	
	Product.	Value.	Product.	Value.
	<i>Short tons.</i>		<i>Short tons.</i>	
Alabama.....	4,090,409	\$4,202,469	4,759,781	\$5,087,596
Arkansas.....	399,888	514,595	542,379	647,560
California.....	110,711	283,019	92,201	204,902
Colorado.....	3,064,003	4,344,196	3,512,632	4,800,000
Georgia.....	228,337	238,315	171,000	256,500
Idaho.....				
Illinois.....	15,222,420	14,171,230	15,660,698	14,237,074
Indiana.....	3,305,737	3,259,233	2,973,474	3,070,918
Indian Territory.....	869,229	1,579,188	1,091,032	1,897,037
Iowa.....	4,021,739	4,903,739	3,825,465	4,867,999
Kansas.....	2,259,922	2,947,517	2,716,705	3,557,303
Kentucky.....	2,701,496	2,472,119	2,916,068	2,715,600
Maryland.....	3,357,813	3,599,572	3,820,239	3,092,515
Michigan.....	74,977	149,195	80,307	133,387
Missouri.....	2,735,221	3,382,858	2,674,606	3,283,242
Montana.....	517,477	1,252,492	541,861	1,228,630
Nebraska.....	1,500	4,500	1,500	4,500
New Mexico.....	375,777	504,390	462,328	779,018
North Carolina.....	10,262	17,864	20,355	39,365
North Dakota.....	30,000	42,000	30,000	42,000
Ohio.....	11,494,506	10,783,171	12,868,683	12,106,115
Oregon.....	61,514	177,875	51,826	155,478
Pennsylvania:				
Anthracite.....	46,468,641	66,383,772	50,665,431	73,944,735
Bituminous.....	42,302,173	35,376,916	42,788,490	37,271,053
Rhode Island.....			500	10,000
Tennessee.....	2,169,585	2,395,746	2,413,678	2,668,188
Texas.....	184,440	465,900	172,100	412,360
Utah.....	318,159	552,390	371,045	666,045
Virginia.....	784,011	589,925	736,399	611,654
Washington.....	1,263,689	3,426,590	1,056,249	2,437,270
West Virginia.....	7,394,654	6,208,128	9,220,665	7,359,816
Wyoming.....	1,870,366	3,183,669	2,327,841	3,555,275
Total product sold.....	157,788,656	\$176,804,573	168,566,669	\$191,133,135



TABLE NO. 17.—Continued.

*Amount and value of coal produced in the United States, etc.—Continued.*

State or Territory.	1892.		1893.	
	Product.	Value.	Product.	Value.
	<i>Short tons.</i>		<i>Short tons</i>	
Alabama .....	5,529,312	\$5,788,898	5,136,935	\$5,096,792
Arkansas .....	535,558	666,230	574,763	773,347
California .....	85,178	209,711	72,603	167,555
Colorado .....	3,510,830	5,685,112	4,102,389	5,104,602
Georgia .....	215,498	212,761	372,740	365,972
Idaho .....				
Illinois .....	17,862,276	16,248,645	19,949,564	17,827,595
Indiana .....	3,345,174	3,620,582	3,791,851	4,055,372
Indian Territory .....	1,192,721	2,048,479	1,352,110	2,235,209
Iowa .....	3,918,491	5,175,060	3,972,229	5,110,460
Kansas .....	3,007,276	3,955,595	2,652,646	3,375,740
Kentucky .....	3,025,313	2,771,238	3,007,179	2,613,569
Maryland .....	3,419,962	3,063,580	3,716,041	3,267,317
Michigan .....	77,990	121,314	45,979	82,462
Missouri .....	2,733,949	3,369,659	2,897,442	3,562,757
Montana .....	564,648	1,330,847	892,309	1,772,116
Nebraska .....	1,500	4,500		
Nevada .....				
New Mexico .....	661,330	1,074,601	665,094	979,044
North Carolina .....	6,679	9,599	17,000	25,500
North Dakota .....	40,725	39,250	49,630	56,250
Ohio .....	13,562,927	12,722,745	13,253,646	12,351,139
Oregon .....	34,661	148,546	41,683	164,500
Pennsylvania .....				
Anthracite .....	52,473,504	82,442,000	53,967,543	85,687,078
Bituminous .....	46,694,576	39,017,164	44,070,724	35,260,674
Rhode Island .....				
Tennessee .....	2,092,064	2,355,441	1,902,258	2,048,449
Texas .....	245,690	569,333	302,306	688,407
Utah .....	361,013	562,625	413,205	611,192
Virginia .....	675,206	578,429	820,339	692,748
Washington .....	1,213,427	2,763,547	1,264,877	2,920,776
West Virginia .....	9,738,755	7,852,114	10,708,578	8,251,170
Wyoming .....	2,503,839	3,168,776	2,439,311	3,290,904
Total product sold .....	179,329,071	207,566,381	182,352,774	208,438,616

TABLE No. 17—*Continued.**Amount and value of coal produced in the United States, etc.—Continued.*

State or Territory.	1894		1895	
	Product.	Value.	Product.	Value.
	<i>Short tons.</i>		<i>Short tons.</i>	
Alabama.....	4,397,178	\$ 4,085,535	5,693,775	\$ 5,126,822
Arkansas.....	512,636	631,908	598,322	751,156
California.....	67,247	155,620	75,453	175,778
Colorado.....	2,831,409	3,516,340	3,032,982	3,675,185
Georgia.....	354,111	299,290	260,998	215,863
Idaho.....				
Illinois.....	17,113,576	15,282,111	17,735,864	14,239,157
Indiana.....	3,423,921	3,295,034	3,995,892	3,642,623
Indian Territory.....	969,606	1,541,293	1,211,185	1,737,254
Iowa.....	3,967,233	4,997,939	4,156,074	4,983,102
Kansas.....	3,388,251	4,178,998	2,926,870	3,481,981
Kentucky.....	3,111,192	2,749,932	3,357,770	2,890,247
Maryland.....	3,501,428	2,687,270	3,915,585	3,160,592
Michigan.....	79,022	103,049	112,322	180,016
Missouri.....	2,245,039	2,634,564	2,372,393	2,651,612
Montana.....	927,395	1,887,330	1,504,193	2,850,906
Nebraska.....				
Nevada.....	150	475		
New Mexico.....	597,196	935,857	720,654	1,072,420
North Carolina.....	16,900	29,875	24,900	41,350
North Dakota.....	42,015	47,019	39,197	42,016
Ohio.....	11,909,856	9,841,723	13,355,806	10,618,477
Oregon.....	47,521	183,614	73,085	247,901
Pennsylvania:				
Anthracite.....	51,921,121	78,488,063	57,999,337	82,019,272
Bituminous.....	30,912,463	29,479,820	50,217,228	35,980,357
Rhode Island.....				
Tennessee.....	2,180,879	2,119,481	2,535,644	2,394,032
Texas.....	420,848	976,458	484,959	913,138
Utah.....	431,550	603,479	471,836	617,319
Virginia.....	1,229,083	933,576	1,368,324	869,873
Washington.....	1,106,470	2,578,441	1,191,410	2,577,958
West Virginia.....	11,627,757	8,706,808	11,387,661	7,710,575
Wyoming.....	2,417,463	3,170,392	2,216,911	2,977,901
Total product sold.....	170,741,626	\$186,141,564	193,117,530	\$197,799,043

a Indicates South Dakota.

TABLE No. 18.

Comparing the amount and value of the product in 1895 with that of 1894, the following statement of increases and decreases is obtained :

*Increases and decreases in coal production during 1895 compared with 1894, by States :*

State or Territory	Increases.		Decreases.	
	Short tons.	Value.	Short tons.	Value.
Alabama .....	1,296,597	\$ 1,041,287		\$ .....
Arkansas .....	85,696	119,168		
California .....	8,206	20,158		
Colorado .....	251,573	158,845		
Georgia .....			93,113	88,427
Illinois .....	622,288			1,042,954
Indiana .....	571,971	347,589		
Indian Territory .....	241,579	195,961		
Iowa .....	188,821			15,837
Kansas .....			461,381	697,017
Kentucky .....	246,578	140,315		
Maryland .....	414,157	473,322		
Michigan .....	42,300	76,967		
Missouri .....	127,354	17,048		
Montana .....	576,798	962,516		
Nevada .....			150	475
New Mexico .....	123,458	136,663		
North Carolina .....	8,000	11,675		
North Dakota .....			2,818	5,003
Ohio .....	1,445,950	776,754		
Oregon .....	26,164	63,987		
Pennsylvania bituminous .....	10,304,765	6,500,537		
Tennessee .....	351,765	229,551		
Texas .....	64,111			63,320
Utah .....	40,286	18,870		
Virginia .....	139,241			63,703
Washington .....	81,940			483
West Virginia .....			239,796	996,233
Wyoming .....			170,552	192,491
Total .....	16,297,788	8,126,270		
Pennsylvania anthracite .....	6,078,216	3,531,209		
Grand total .....	22,376,004	\$11,657,479		

TABLE NO. 19.

## Labor Statistics.

The following table shows under one head the total number of employees in the coal mines of the United States for a period of six years, and the average time made by each :

*Labor Statistics of coal mining since 1890.*

State or Territory.	1890		1891		1892	
	Num- ber of days active.	Average number employed.	Num- ber of days active.	Average number employed.	Num- ber of days active.	Average number employed.
Alabama.....	217	10,642	268	9,303	271	10,075
Arkansas.....	214	938	214	1,317	199	1,128
California.....	301	364	222	256	204	187
Colorado.....	220	5,827		6,000	229	5,747
Georgia.....	313	425	312	850	277	467
Illinois.....	204	28,574	215½	32,951	219½	34,585
Indiana.....	220	5,489	190	5,879	224	6,436
Indian Territory.....	238	2,571	221½	2,891	311	3,257
Iowa.....	213	8,130	224	8,124	236	8,170
Kansas.....	210	4,523	222	6,201	208½	6,559
Kentucky.....	219	5,259	225	6,355	217	6,724
Maryland.....	244	3,842	244	3,891	225	3,886
Michigan.....	229	180	205	223	195	230
Missouri.....	229	5,971	218	6,199	230	5,893
Montana.....	218	1,251		1,119	258	1,158
Nevada.....						
New Mexico.....	192	827	265	806	223	1,083
North Carolina.....	200	80	254	80	160	90
North Dakota.....					216	54
Ohio.....	201	20,576	206	22,182	212	22,578
Oregon.....	305	208	125	100	120	90
Pennsylvania bituminous.....	232	61,333	223	63,661	223	66,655
Tennessee.....	263	5,082	230	5,097	240	4,926
Texas.....	241	674	225	787	203	871
Utah.....	289	429		621	230	646
Virginia.....	296	1,295	246	820	192	836
Washington.....	270	2,206	211	2,447	247	2,564
West Virginia.....	227	12,236	237	14,327	228	14,867
Wyoming.....	246	3,272		3,411	225	3,133
Total.....	226	192,204	223	205,803	219	212,893
Pennsylvania anthracite.....	200	126,000	203	126,350	198	129,050
Grand total.....	216	318,204	215	332,153	212	341,943

a General average obtained from the average days made in the different States, exclusive of Colorado, Montana, Utah, and Wyoming.

TABLE NO. 19.—Continued.

*Labor statistics of coal mining since 1890—Continued.*

State or Territory.	1893		1894		1895	
	Number of days active	Average number employed.	Number of days active.	Average number employed.	Number of days active.	Average number employed.
Alabama.....	237	11,294	238	10,859	244	10,346
Arkansas.....	151	1,559	134	1,493	176	1,213
California.....	208	158	232	125	202	190
Colorado.....	188	7,202	155	6,507	182	6,125
Georgia.....	342	736	304	729	312	848
Illinois.....	229	35,390	183	38,477	182	38,630
Indiana.....	201	7,644	149	8,603	189	8,530
Indian Territory.....	171	3,446	157	3,101	164	3,212
Iowa.....	204	8,863	170	9,996	189	10,066
Kansas.....	147	7,310	164	7,339	159	7,482
Kentucky.....	202	6,581	145	8,083	146	7,665
Maryland.....	240	3,935	215	3,974	248	3,912
Michigan.....	154	163	224	223	186	320
Missouri.....	206	7,375	138	7,623	163	6,299
Montana.....	242	1,401	192	1,782	223	2,184
Nevado.....			60	2		
New Mexico.....	229	1,011	182	985	190	1,383
North Carolina.....	80	70	144	96	226	61
North Dakota.....	193	88	156	77	139	65
Ohio.....	188	23,931	136	27,106	176	24,644
Oregon.....	192	110	243	88	69	414
Pennsylvania bituminous.....	190	71,931	165	75,010	206	71,130
Tennessee.....	232	4,976	210	5,542	224	5,120
Texas.....	251	996	283	1,062	171	1,642
Utah.....	226	576	199	671	203	670
Virginia.....	353	961	234	1,635	225	2,158
Washington.....	241	2,757	207	2,662	224	2,840
West Virginia.....	219	16,524	186	17,824	195	19,159
Wyoming.....	189	3,878	190	3,032	184	3,449
Total.....	204	230,365	171	244,603	194	239,962
Pennsylvania anthracite.....	197	132,944	190	131,608	196	142,917
Grand total.....	201	363,309	178	376,206	195	382,879

**Average Prices.**

The following table will be of interest as showing the fluctuations in the average prices ruling in each State since 1886. Prior to that year the statistics were not collected with sufficient accuracy to make a statement of the average prices of any practical value. These averages are obtained by dividing the total value by the total product, except for the years 1886, 1887, and 1888, when the item of colliery consumption was not considered.

## COMMISSIONER OF LABOR.

TABLE NO. 20.

*Average prices for coal at the mines since 1886.*

State or Territory	1886	1887	1888	1889	1890
Alabama.....	\$ 3.09	\$ 1.30	\$ 1.15	\$ 1.11	\$ 1.03
Arkansas.....	1.60	1.68	1.50	1.42	1.29
California.....	3.00	3.00	4.00	2.33	2.56
Colorado.....	2.35	2.20	2.20	1.51	1.40
Georgia.....	1.50	1.50	1.50	1.50	1.04
Illinois.....	1.11	1.09	1.12	.97	.93
Indiana.....	1.15	1.34	1.40	1.02	.99
Indian Territory.....	1.60	1.87	1.88	1.76	1.82
Iowa.....	1.25	1.34	1.30	1.33	1.24
Kansas.....	1.20	1.40	1.50	1.48	1.30
Kentucky.....	1.15	1.15	1.20	.69	.92
Maryland.....	.95	.95	.95	.86	.86
Michigan.....	1.50	1.50	1.66	1.71	1.99
Missouri.....	1.30	1.34	2.21	1.89	1.24
Montana.....	3.50	3.50	3.50	2.42	2.42
Nevada.....					
New Mexico.....	3.00	3.00	3.00	1.79	1.34
North Carolina.....					1.74
North Dakota.....	1.59	1.50	3.50	1.43	1.40
Ohio.....	.95	.88	.93	.93	.94
Oregon.....	2.50	2.20	3.00		2.89
Pennsylvania bituminous.....	.80	.90	.95	.77	.84
Tennessee.....	1.15	1.30	1.10	1.21	1.10
Texas.....	1.85	2.00	2.05	2.66	2.53
Utah.....	2.10	2.00	2.10	1.59	1.74
Virginia.....	1.00	.94	1.00	.93	.75
Washington.....	2.25	2.20	3.00	2.32	2.71
West Virginia.....	.94	.95	1.10	.82	.84
Wyoming.....	3.00	3.00	3.00	1.26	1.70
Total bituminous.....	a 1.06	a 1.12	a 1.00	1.00	.99
Pennsylvania anthracite.....	a 1.95	a 2.01	a 1.95	1.44	1.43
General average.....	a 1.30	a 1.45	a 1.42	1.13	1.12

a Exclusive of colliery consumption.

TABLE NO. 20.—Continued.

*Average prices of coal at the mines since 1886—Continued.*

State or Territory.	1891	1892	1893	1894	1895
Alabama.....	\$ 1.07	\$ 1.05	\$ 0.99	\$ 0.93	\$ 0.90
Arkansas.....	1.19	1.24	1.34	1.22	1.25
California.....	2.20	2.46	2.31	2.31	2.33
Colorado.....	1.37	1.62	1.24	1.24	1.20
Georgia.....	1.50	.99	.98	.85	.83
Illinois.....	.91	.91	.89	.89	.80
Indiana.....	1.03	1.04	1.07	.96	.91
Indian Territory.....	1.74	1.71	1.79	1.59	1.43
Iowa.....	1.27	1.32	1.30	1.26	1.20
Kansas.....	1.31	1.31½	1.27	1.23	1.20
Kentucky.....	.93	.92	.86	.88	.86
Maryland.....	.81	.89	.88	.77	.81
Michigan.....	1.66	1.56	1.79	1.47	1.60
Missouri.....	1.23	1.23	1.23	1.17	1.12
Montana.....	2.27	2.36	1.99	2.04	1.89
Nevada.....				3.15	
New Mexico.....	1.68	1.62	1.47	1.57	1.49
North Carolina.....	1.93	1.44	1.50	1.76	1.66
North Dakota.....	1.40	.96	1.13	1.12	1.07
Ohio.....	.94	.94	.92	.88	.79
Oregon.....	3.00	4.29	3.57	3.87	3.36
Pennsylvania bituminous.....	.87	.84	.80	.74	.72
Tennessee.....	1.11	1.13	1.08	.97	.93
Texas.....	2.40	2.32	2.28	2.32	1.88
Utah.....	1.80	1.56	1.48	1.40	1.31
Virginia.....	.83	.86	.84	.76	.63
Washington.....	2.31	2.28	2.31	2.33	2.16
West Virginia.....	.80	.80	.77	.75	.68
Wyoming.....	1.53	1.27	1.35	1.31	1.33
Total bituminous.....	.99	.99	.96	.91	.86
Pennsylvania anthracite.....	1.46	1.57	1.59	1.52	1.41
General average.....	1.13	1.16	1.14	1.09	1.02

**Imports and Exports.**

The following tables have been compiled from official returns to the Bureau of Statistics of the Treasury Department, and show the imports and exports of coal from 1867 to 1895 inclusive. The values given in both cases are considerably higher than the average "spot" rates by which the values of the domestic production have been computed.

The tariff from 1824 to 1843 was 6 cents per bushel, or \$1.68 per long ton; from 1843 to 1846, \$1.75 per ton; 1846 to 1857, 30 per cent. ad valorem; 1857 to 1861, 24 per cent. ad valorem; 1861, bituminous and shale, \$1 per ton; all other, 50 cents per ton; 1862 to 1864, bituminous and shale, \$1.10 per ton; all other, 60 cents per ton; 1864 to 1872, bituminous and shale, \$1.25 per ton; all other, 40 cents per ton. By the act of 1872 the tariff on bituminous coal and shale was made 75 cents per ton, and so continued until the act of August, 1894, changed it to 40 cents per ton. On Slack or culm the tariff was made 40 cents per ton by the act of 1872; was changed to 30 cents per ton by the act of March, 1883, and so continued until the act of August, 1894, changed it to 15 cents per ton. Anthracite coal has been free of duty since 1870. During

the period from June, 1854, to March, 1866, the reciprocity treaty was in force, and coal from the British Possessions in North America was admitted into the United States duty free.

The exports consist both of anthracite and bituminous coal, the amount of bituminous being greater in the last few years. They are made principally by rail over the international bridges and by lake and sea to the Canadian provinces. Exports are also made by sea to the West Indies, to Central and South America, and elsewhere.

The imports are principally from Anstralia and British Columbia to San Francisco, from Great Britain to the Atlantic and Pacific coasts and from Nova Scotia to Atlantic Coast Points.

TABLE NO. 21.

*Coal imported and entered for consumption in the United States, 1867 to 1895.*

Year ending—	Anthracite.		Bituminous and shale.	
	Quantity.	Value.	Quantity.	Value.
	<i>Long tons.</i>		<i>Long tons.</i>	
June 30, 1867.....			509,802	\$1,412,597
1868.....			394,021	1,250,513
1869.....			437,228	1,222,119
1870.....			415,729	1,103,965
1871.....	973	\$4,177	430,508	1,121,914
1872.....	390	1,322	485,063	1,279,686
1873.....	2,221	10,764	460,028	1,548,208
1874.....	471	3,224	492,063	1,937,274
1875.....	138	963	436,714	1,791,601
1876.....	1,428	8,560	400,632	1,592,816
1877.....	630	2,220	495,816	1,782,941
1878.....	158	518	572,846	1,929,660
1879.....	488	721	486,501	1,716,209
1880.....	8	40	471,818	1,588,312
1881.....	1,207	2,628	652,963	1,968,199
1882.....	86	148	795,722	2,141,373
1883.....	507	1,172	645,924	3,013,555
1884.....	1,448	4,404	748,996	2,494,228
1885.....	4,976	15,848	768,477	2,548,432
Dec. 31, 1886.....	2,039	4,920	811,657	2,501,153
1887.....	14,181	42,983	819,242	2,609,311
1888.....	24,093	68,710	1,085,647	3,728,060
1889.....	20,652	117,434	1,001,374	3,425,347
1890.....	15,145	46,695	1,199,971	2,892,216
1891.....	37,607	112,722	1,363,313	4,561,105
1892.....	65,058	197,583	1,143,304	3,744,862
1893.....	53,768	148,112	a 1,082,993	3,623,892
1894.....	90,068	234,024	b 1,242,714	3,785,513
1895.....	141,337	328,705	c 1,212,023	3,626,623

a Including 14,632 tons of slack or culm, valued at \$16,906.

b Including 30,453 tons of slack or culm, valued at \$32,267.

c Including 18,174 tons of slack or culm, valued at \$15,309.



TABLE NO. 22.

*Coal of domestic production exported from the United States, 1867 to 1895.*

Year Ending—	Anthracite.		Bituminous and shale.	
	Quantity.	Value	Quantity.	Value.
	<i>Long tons.</i>		<i>Long tons.</i>	
June 30, 1867.....	192,912	\$ 1,333,457	92,189	\$ 512,742
1868.....	192,291	1,082,745	86,367	433,475
1869.....	283,783	1,553,115		
1870.....	121,098	803,135	106,820	503,223
1871.....	134,571	806,169	133,380	564,067
1872.....	259,567	1,375,342	141,311	586,264
1873.....	342,180	1,827,822	242,463	1,086,253
1874.....	401,912	2,236,084	361,490	1,587,666
1875.....	316,157	1,791,626	203,189	828,943
1876.....	337,934	1,869,424	230,144	850,711
1877.....	418,791	1,891,351	321,665	1,024,711
1878.....	319,477	1,006,843	340,661	1,352,624
1879.....	386,916	1,427,886	276,000	891,512
1880.....	392,626	1,362,901	222,634	696,179
1881.....	462,208	2,091,928	191,038	739,532
1882.....	553,742	2,589,847	314,320	1,102,898
1883.....	557,813	2,648,033	463,061	1,693,214
1884.....	619,040	3,053,550	616,265	1,977,959
1885.....	888,461	2,586,421	693,481	1,989,541
Dec. 31, 1886.....	667,076	2,718,143	544,768	1,440,631
1887.....	825,486	3,469,166	706,364	2,001,966
1888.....	969,542	4,825,126	860,462	2,529,472
1889.....	857,632	3,636,347	935,151	2,783,592
1890.....	794,335	3,272,697	1,280,930	4,004,995
1891.....	861,251	3,577,610	1,615,869	5,104,850
1892.....	851,639	3,722,908	1,645,869	4,999,289
1893.....	1,333,287	6,241,007	2,324,591	6,009,801
1894.....	1,440,625	6,359,021	2,195,716	4,970,270
1895.....	1,470,710	5,937,130	2,211,983	4,816,847

## World's Product of Coal.

In the following table is given the coal product of the principal countries for the years nearest the one under review for which figures could be obtained. For the sake of convenience the amounts are expressed in the unit of measurement adopted in each country and reduced for comparison to short tons of 2,000 pounds. In each case the year is named for which the product is given.

TABLE NO. 23.

*The world's product of coal.*

Country.	Usual unit in producing country.	Equivalent in short tons.
Great Britain (1875)..... long tons.....	189,631,362	212,320,725
United States (1895)..... do.....	172,426,366	193,117,530
Germany (1895)..... metric tons.....	103,876,813	114,521,186
France (1894)..... do.....	27,459,137	30,273,699
Austria-Hungary (1893)..... do.....	30,448,304	33,570,358
Belgium (1895)..... do.....	20,411,849	22,507,371
Russia (1893)..... do.....	7,535,000	8,307,317
Canada (1895)..... short tons.....	3,512,504	3,512,504
Japan (1893)..... do.....	3,400,000	3,400,000
Spain (1895)..... metric tons.....	1,754,560	1,956,452
New Zealand (1894)..... short tons.....	719,546	719,546
Sweden (1894)..... metric tons.....	214,000	235,935
Italy (1894)..... do.....	271,295	299,103
Other countries.....		4,126,553
Total.....		628,805,239
Percentage of the United States.....		31

The steady advance of the United States in industrial development is well illustrated in the following tables, showing the world's production of coal for twenty-eight years. In 1868 and 1869, when the total output of the world was about 225,000,000 tons, the United States yielded but 14 per cent. In 1892, 1893, 1894 and 1895 the world's output has exceeded half a billion tons each year, of which the United States has contributed an average of 30 per cent, having more than doubled its percentage. Great Britain, whose mines furnished more than 50 per cent. of the world's product in 1865, now barely exceeds the percentage of the United States.

TABLE NO. 24.

*World's production of coal, by countries, since 1868.*

Year.	United States.		Great Britain	
	Long tons.	Short tons.	Long tons.	Short tons.
1868	28,258,000	31,648,960	103,141,157	115,518,696
1869	24,278,000	31,660,160	107,427,557	120,318,864
1870	32,863,000	36,806,560	110,431,192	123,682,935
1871	41,384,000	46,350,080	117,352,028	131,434,271
1872	45,416,000	50,865,920	123,407,316	138,316,994
1873	51,004,000	57,124,480	128,680,131	144,121,747
1874	46,916,000	52,545,920	126,580,108	141,780,921
1875	46,686,000	52,288,320	133,306,485	149,303,263
1876	47,500,000	53,200,000	134,125,166	150,220,106
1877	53,948,000	60,421,760	134,179,968	150,281,564
1878	51,655,000	57,853,600	132,612,083	148,525,511
1879	59,333,000	66,452,960	133,720,393	149,766,840
1880	63,822,830	71,481,569	146,969,409	164,605,738
1881	76,865,357	85,881,030	154,194,300	172,686,416
1882	92,219,454	103,285,709	156,499,977	175,279,574
1883	102,867,969	115,212,125	163,737,327	183,385,806
1884	106,904,295	119,735,031	160,757,779	180,048,712
1885	99,069,216	110,957,522	156,351,418	178,473,588
1886	100,663,753	112,743,403	157,518,482	176,420,700
1887	116,049,604	129,675,557	162,119,812	181,574,189
1888	132,731,609	148,659,402	169,935,219	190,327,445
1889	126,097,780	141,229,514	176,916,724	198,146,731
1890	140,882,729	157,788,657	181,614,288	203,408,003
1891	150,505,954	168,566,688	185,479,126	207,756,621
1892	160,115,242	179,309,071	181,786,571	203,601,296
1893	182,814,977	182,352,774	164,323,795	184,044,590
1894	152,447,791	170,741,526	188,277,125	210,870,828
1895	172,426,366	193,117,530	189,661,362	212,320,725

TABLE NO. 25.

*World's production of coal, by countries, since 1868—Continued.*

Year.	Germany.		France.	
	Metric tons.	Short tons.	Metric tons.	Short tons.
1868	32,879,123	36,249,233	13,330,826	14,697,276
1869	34,343,913	37,864,164	13,509,745	14,894,494
1870	31,003,004	37,488,312	13,179,788	14,530,716
1871	37,856,110	41,736,361	13,240,135	14,597,249
1872	42,324,467	46,662,725	16,100,773	17,751,102
1873	46,145,191	50,875,176	17,479,341	19,270,973
1874	46,658,145	51,440,605	16,977,913	18,640,974
1875	47,804,054	52,703,970	16,956,810	18,691,916
1876	49,550,461	54,629,383	17,101,448	18,854,346
1877	48,229,882	53,173,445	16,804,529	18,576,993
1878	50,519,899	55,698,158	16,967,916	18,699,410
1879	53,470,716	58,951,464	17,110,979	18,861,854
1880	59,118,035	65,177,634	19,361,564	21,376,124
1881	61,540,485	67,848,385	19,765,953	21,791,996
1882	65,378,211	72,079,478	20,603,704	22,715,584
1883	70,442,648	77,661,019	21,331,881	23,520,607
1884	72,113,820	79,565,487	20,023,514	22,075,924
1885	73,675,515	81,227,255	19,510,530	21,510,359
1886	73,682,584	81,235,049	19,909,894	21,950,678
1887	76,232,618	84,046,461	21,287,589	23,469,567
1888	81,961,083	90,360,992	22,602,894	24,919,691
1889	81,788,609	93,479,441	24,303,569	26,794,619
1890	89,051,527	98,179,509	26,053,118	28,756,638
1891	94,252,278	103,913,136	26,024,893	28,692,444
1892	92,544,030	102,029,793	26,178,701	28,862,018
1893	95,426,153	105,207,331	25,630,681	28,280,207
1894	98,876,105	109,010,906	27,459,137	30,273,699
1895	104,876,813	114,524,186	(a)	(a)

a Latest figures available have been used in making up the total for the year.

TABLE NO. 25—Continued.

*World's production of coal, by countries, since 1868—Continued.*

Year.	Austria-Hungary.		Belgium.	
	Metric tons.	Short tons.	Metric tons.	Short tons.
1868	7,021,756	7,741,486	12,298,589	13,559,194
1869	7,663,043	8,448,505	12,943,994	14,270,753
1870	8,355,945	9,212,429	13,687,118	15,101,073
1871	8,437,401	9,302,235	13,733,176	15,140,827
1872	8,825,896	9,730,550	15,658,948	17,283,990
1873	10,104,769	11,140,508	15,778,401	17,395,687
1874	12,631,364	13,926,079	14,669,029	16,172,614
1875	13,062,738	14,395,137	15,011,331	16,549,992
1876	13,000,000	14,327,300	14,329,578	15,798,360
1877	13,500,000	14,883,750	13,669,077	15,070,157
1878	13,900,000	15,324,750	14,899,175	16,426,340
1879	14,500,000	15,986,250	15,447,292	17,030,640
1880	14,800,000	16,317,000	16,886,698	18,617,585
1881	15,304,813	16,873,556	16,873,951	18,603,531
1882	15,555,292	17,149,709	17,590,989	19,391,665
1883	17,047,961	18,795,377	18,177,754	20,040,974
1884	18,000,000	19,845,000	18,051,499	19,901,778
1885	20,435,463	22,530,098	17,437,603	19,224,957
1886	20,779,441	22,909,334	17,285,543	19,057,811
1887	21,879,172	24,121,787	18,378,624	20,264,433
1888	23,859,608	26,305,218	19,218,481	21,188,375
1889	25,328,417	27,924,560	19,869,980	21,906,653
1890	27,504,032	30,323,195	20,365,960	22,453,471
1891	28,823,240	31,777,632	19,675,644	21,692,398
1892	29,037,978	32,014,371	19,583,173	21,591,448
1893	30,449,304	33,570,358	19,410,519	21,400,097
1894	(a)	(a)	20,458,827	22,555,657
1895	(a)	(a)	20,414,849	22,507,371

a Latest figures available have been used in making up the total for the year.

TABLE NO. 26.

*World's production of coal, by countries, since 1868—Continued.*

Year.	Russia.		Other countries.	Total.	Per cent of United States.
	Metric tons.	Short tons.	Short tons.	Short tons.	
1868			1,152,665	220,566,870	14 35
1869			1,107,395	228,564,335	13 85
1870	696,673	768,082	1,086,717	2 8,676,824	15 42
1871			1,128,822	259,689,845	17 85
1872			1,293,835	281,885,116	14 04
1873			1,514,191	301,442,602	18 95
1874			2,497,160	297,244,263	17 68
1875	1,709,718	1,894,964	2,938,191	304,459,053	16 95
1876			2,601,761	309,631,336	17 18
1877			2,433,109	315,180,778	19 17
1878	2,483,575	2,738,141	3,176,050	318,441,900	18 17
1879	2,874,790	3,169,436	3,362,605	333,585,669	19 92
1880	3,238,470	3,570,413	3,621,342	361,737,495	19 60
1881	3,439,787	3,792,365	5,145,974	392,063,233	21 87
1882	3,672,782	4,049,242	6,128,611	420,082,472	24 58
1883	3,916,105	4,317,506	6,931,279	449,865,093	25 61
1884	3,869,689	4,265,333	7,397,303	422,745,193	26 45
1885	4,207,905	4,639,215	7,570,507	446,133,501	24 87
1886	4,506,027	4,967,895	9,078,136	4,834,286	25 15
1887	4,464,174	4,921,752	9,838,438	178,210,184	27 18
1888	5,187,312	5,719,011	10,848,759	518,324,893	28 68
1889	6,245,577	6,852,674	11,779,474	528,113,636	26 74
1890	6,016,525	6,633,219	12,048,616	559,591,108	28 20
1891	6,233,020	6,871,905	13,789,657	530,040,451	28 93
1892	6,816,323	7,514,496	13,693,435	588,545,428	30 47
1893	7,535,000	8,307,337	13,087,484	576,250,481	31 64
1894	(a)	(a)	14,516,903	599,847,414	28 45
1895	(a)	(a)	14,250,093	628,805,239	30 71

a Latest figures available have been used in making up the total for the year.

TABLE No. 27.

The following table shows in detail the production of the countries included under "other countries" in the preceding statement.

*Product of minor coal-producing countries since 1868.*

Year.	New South Wales.		Queensland.		New Zealand.	
	Long tons.	Short tons.	Long tons.	Short tons.	Long tons.	Short tons.
1868.....	954,231	1,068,739	19,611	21,964		
1869.....	919,774	1,030,147	11,120	12,454		
1870.....	868,564	972,791	22,639	25,356		
1871.....	898,784	1,006,638	17,000	19,040		
1872.....	1,012,426	1,133,917	27,727	31,064		
1873.....	1,192,862	1,336,005	33,613	37,647		
1874.....	1,304,567	1,461,115	43,443	48,656		
1875.....	1,329,729	1,489,296	32,107	36,960		
1876.....	1,319,918	1,478,308	50,627	56,702		
1877.....	1,444,271	1,617,584	60,918	68,228		
1878.....	1,575,497	1,764,556	52,580	58,890	162,218	181,684
1879.....	1,583,381	1,773,387	55,012	61,613	231,218	258,964
1880.....	1,496,180	1,642,122	58,052	65,018	299,923	335,913
1881.....	1,769,597	1,981,949	65,612	73,485	337,262	377,733
1882.....	2,109,282	2,362,396	74,436	83,368	378,272	423,665
1883.....	2,521,457	2,824,032	104,750	117,330	421,764	472,376
1884.....	2,749,109	3,079,002	120,727	135,214	480,831	538,531
1885.....	2,878,843	3,244,327	209,698	234,862	511,063	572,390
1886.....	2,830,175	3,169,796	228,656	256,094	534,355	598,475
1887.....	2,922,497	3,273,197	238,813	267,470	558,620	625,654
1888.....	3,203,444	3,587,857	311,412	348,781	613,895	687,562
1889.....	3,655,632	4,094,308	265,507	297,368	586,445	656,418
1890.....	3,060,876	3,428,181	338,344	378,945	637,397	713,885
1891.....	4,037,929	4,522,480	271,603	304,195	668,794	749,049
1892.....	3,780,968	4,234,684	265,086	296,896	673,315	754,113
1893.....	3,278,328	3,671,727	264,403	296,131	691,548	774,534
1894.....	3,672,076	4,112,725	270,705	303,190	719,546	805,892
1895.....						

TABLE No. 27—*Continued.**Product of minor coal-producing countries since 1868.—Continued.*

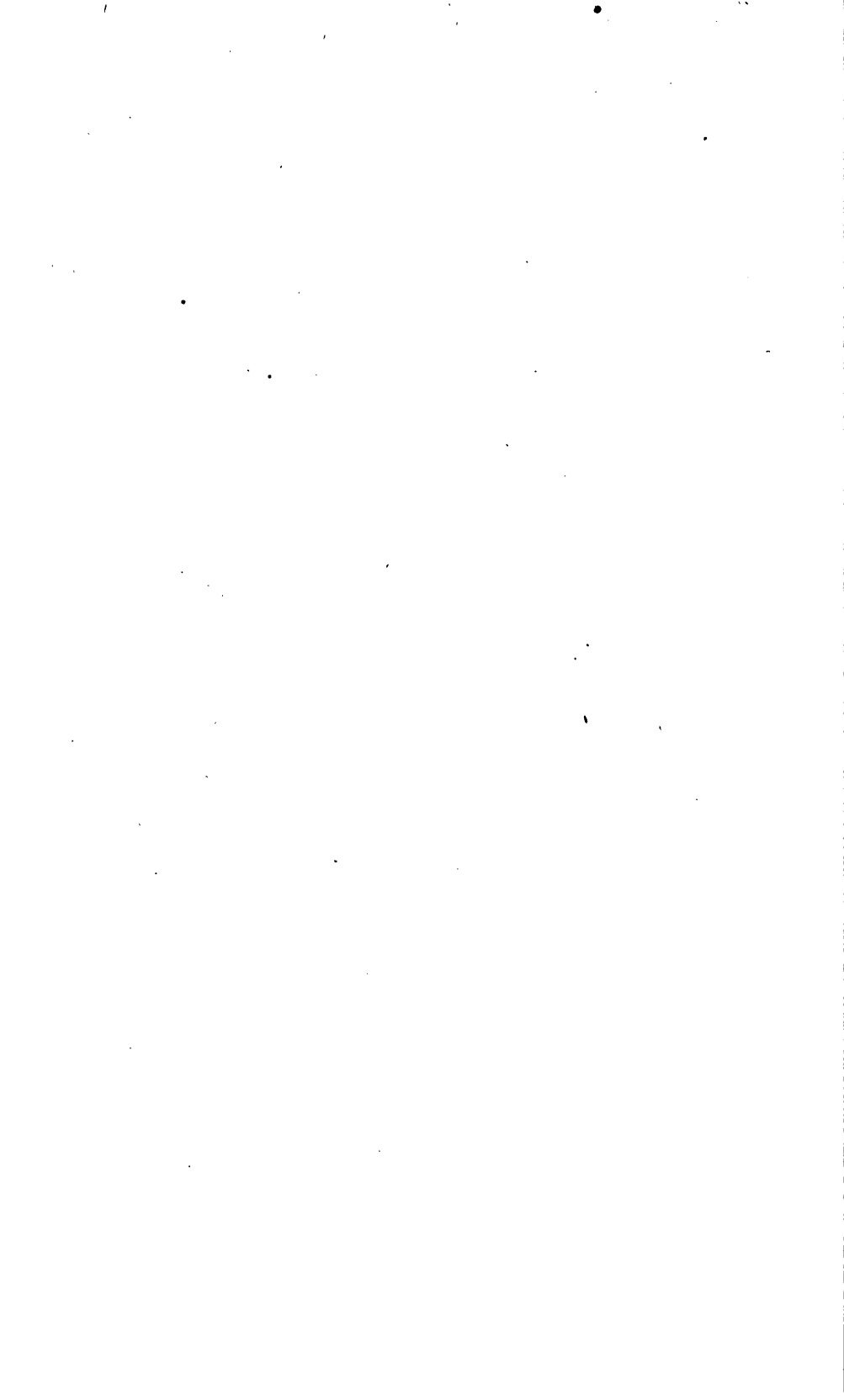
Year.	Victoria.		Canada (Short tons).	India.	
	Long tons.	Short tons.		Long tons.	Short tons.
1868					
1869					
1870					
1871					
1872					
1873					
1874			1,058,446		
1875			984,905		
1876			933,803		
1877			1,002,395		
1878			1,034,081		
1879			1,123,863		
1880			1,424,635		
1881			1,487,182	997,543	1,117,248
1882			1,811,708	1,130,242	1,265,871
1883			1,806,259	1,315,976	1,473,893
1884			1,950,080	1,296,312	1,418,269
1885			1,879,470	1,294,221	1,449,528
1886			2,091,976	1,401,295	1,569,450
1887			2,418,494	1,560,393	1,747,640
1888			2,658,134	1,802,876	2,019,221
1889	14,421	16,152	2,719,478	2,045,359	2,290,802
1890	20,750	23,240	3,117,661	2,169,521	2,428,744
1891	22,834	25,574	3,623,076	2,328,577	2,608,006
1892	23,363	26,166	3,292,547	2,537,696	2,842,220
1893	91,726	102,733	3,201,742	2,529,855	2,833,438
1894	171,659	192,258	3,903,913		
1895			3,512,504		



TABLE NO. 27—Continued.

*Product of minor coal-producing countries since 1868—Continued.*

Year.	Spain.		Italy.		Sweden.	
	Metric tons.	Short tons.	Metric tons.	Short tons.	Metric tons.	Short tons.
1868.			56,201	61,962		
1869.			58,770	64,794		
1870.			80,336	88,570		
1871.			93,555	103,144		
1872.			116,884	128,864		
1873.			127,473	140,539		
1874.			116,955	128,943		
1875.			116,399	128,330		
1876.			125,588	132,948		
1877.			122,360	134,902		
1878.			124,117	136,839		
1879.			131,318	144,778		
1880.			139,369	153,654		
1881.			134,582	148,377		
1882.			164,737	181,623		
1883.			214,421	236,399		
1884.			223,322	246,213		
1885.			190,413	209,930		
1886.	1,001,432	1,104,079	243,325	268,266		
1887.	1,038,305	1,144,731	327,665	361,251		
1888.	1,036,565	1,142,813	366,794	404,390		
1889.	1,153,755	1,272,015	390,320	432,533		
1890.	1,212,089	1,336,328	376,326	415,500	187,512	206,132
1891.	1,287,983	1,420,007	289,286	318,938	198,033	218,331
1892.	1,461,196	1,610,969	295,713	326,024	199,380	219,816
1893.	1,484,794	1,636,386	317,249	349,767	199,933	220,426
1894.	1,657,010	1,830,853	271,295	299,103	213,633	235,532
1895.	1,774,560	1,956,462				



# COKE STATISTICS.

## COKE.

Five coking districts are recognized in West Virginia, viz., the Kanawha, the New River, the Flat Top, the Upper Monongahela, and the Upper Potomac. The first two are compact and continuous. They include the ovens along the line of the Chesapeake and Ohio Railroad from west of Low Moor, in Virginia, to the Kanawha Valley. The Flat Top region includes the ovens in what is sometimes called the Pocahontas district. The fourth district, the Upper Monongahela or Northern, is a scattered one, including the ovens in Preston, Taylor, Harrison, and Marion counties, on the upper waters of the Monongahela. The district we have termed the Upper Potomac includes the coke ovens in the Elk Garden and Upper Potomac fields. A description of the coals used in coking in each district will be given under their several heads.

### POCAHONTAS.—FLAT TOP DISTRICT.

This district known in its early history as the Pocahontas and later as the Flat Top, from the mountain, which is the most important and conspicuous feature of this region, is located in the counties of Tazewell, in southwestern Virginia, and Mercer and McDowell, in southeastern West Virginia. This field can be divided roughly into (1) the Pocahontas district, including the workings at and near the town of Pocahontas, Virginia; (2) the Bluestone district including the workings on the Bluestone near Bramwell, in Mercer county, W. Va., on the southeastern slope of Flat Top Mountain; (3) the Elkhorn district, including the workings in McDowell county, W. Va., on the northeast slope of the Flat Top Mountain, on the headwaters of the Elkhorn.

This coal is semi-bituminous, somewhat dull in luster, rather hard in the veins, requiring powder to mine, but as will be seen from the following analysis, is low in volatile matter and ash, and high in fixed carbon. It is a superior grade of steam coal, giving an exceedingly bright, hot, clear fire. It makes an excellent coke. The following is an average of fifteen analyses of coal from the Pocahontas and Bluestone sub-districts:

#### ANALYSIS OF POCAHONTAS FLAT TOP COAL.

	Per Cent.
Water .....	1.011
Volatile matter .....	18.812
Fixed carbon .....	72.708
Sulphur .....	.787
Ash .....	5.191

Recent analyses of the coke made in the ovens of the Southwest Virginia Improvement Company, at Pocahontas, are given in the following table:

ANALYSES OF COKE FROM THE FLAT TOP REGION, W. VA.

	No. 1.	No. 2.
	Per cent.	Per cent.
Moisture.....	0.570	0.347
Volatile Matter.....	1.028	.757
Fixed Carbon.....	92.266	92.550
Ash.....	5.584	5.749
Sulphur.....	.552	.597
Total.....	100.00	100.00

The Flat Top coke is an excellent fuel. It is low in ash, as will be seen from the above analyses, high in carbon, somewhat cellular, and, as compared with most cokes of the country, bright, hard, strong, and dense. It is however, somewhat fragile and dull in luster. The wastage in drawing and transporting is large, but in the furnace it bears a heavy burden, and gives a large output with a small consumption per ton of pig.

The statistics of the manufacture of coke in the Flat Top district for the years 1886 to 1895, are as follows :

Statistics of the manufacture of Coke in the Flat Top district of West Virginia from 1886 to 1895 inclusive :

TABLE NO. 28.

YEARS	Estab-lish-ment.	Ovens Built.	Ovens Build-ing.	Coal Used. sh'rt tons	Coke Produced sh'rt tons	Total Value of Coke at Ovens.	Value of Coke at Ovens per ton.	Yield of Coal in Coke Per Ct.
1886.....	2	10	38	1,075	658	\$ 1,316	\$ 2.00	61.2
1887.....	5	348	642	76,274	51,071	100,738	1.97	67.
1888.....	13	882	200	164,818	103,947	183,938	1.77	63.
1889.....	16	1,433	431	387,533	240,386	405,635	1.69	64.
1890.....	17	1,581	252	566,118	325,576	571,239	1.75	57.5
1891.....	19	1,889	358	537,847	312,421	545,367	1.70	58.
1892.....	30	2,818	933	595,734	353,690	596,911	1.69	59.3
1893.....	31	4,319	80	746,051	451,503	713,281	1.58	60.5
1894.....	36	4,648	18	1,229,136	746,762	989,876	1.325	60.7
1895.....	36	4,648	18	858,913	524,252	656,494	1.25	61.

From the above statement it will be seen that the production of coke in 1895 was 42.6 per cent less than the production of 1894. This indicates that as relates to production, the year 1894 was the best in the Pocahontas Flat Top district. The price received for the coke was less than ever before. It is probable that the strike

in the Connellsville district early in the year 1894 had considerable influence toward increasing the production of coke in the Flat Top district for that year.

#### NEW RIVER DISTRICT.

The New River district includes ovens along the Chesapeake & Ohio Railroad from Quinnimont to Nuttallburg. The coal of this region is very much of the same character as that of the Flat Top region, these coking coals being spoken of as "New River" or Flat Top," though they are mined from the same beds in the same formation, the former from the northern and the latter from the southern part of the same coal bearing area. The length of this New River or Flat Top field from northeast to southwest, is about 60 miles; its average breadth, from southeast to northwest, is not far from 16 miles. It is the largest field of distinctively coking coals in the United States. The coal beds find their greatest development in the vicinity of Pocahontas, where the lower one, the Quinnimont, of New River, the No. 3, or Pocahontas, of the Flat Top region, attains a thickness of 12 feet of practically solid coal. The beds become thinner when passing to the northward.

The following analyses were made of coal and coke produced in the New River district of West Virginia by the Quinnimont Coal and Coke Company:

#### ANALYSES OF COAL AND COKE FROM THE NEW RIVER DISTRICT.

	COAL.	COKE.
	Per cent.	Per cent.
Water .....	0.760	0.520
Volatile Matter .....	18.650	0.480
Fixed Carbon .....	79.260	93.850
Sulphur .....	.230	.300
Total .....	1.100	4.850
	100.000	100.000

TABLE No. 29.

*Statistics of the manufacture of Coke in the New River District from 1880 to 1895.*

Years.	Estab- lish- ments.	Ovens built.	Ovens build- ing.	Coal used.	Coke produced.	Total value of coke at ovens.	Value of coke at Ovens. Per ton.	Yield of coal in coke
				<i>Short tons.</i>	<i>Short tons.</i>			<i>Per cent.</i>
1880 .....	6	468	40	159,032	98,427	\$239,977	\$2 44	62
1881 .....	6	499	0	219,446	136,423	334,652	2 45	62
1882 .....	6	518	0	213,361	143,373	352,415	2 38	64
1883 .....	6	546	0	261,171	167,795	384,552	2 29	64
1884 .....	8	547	12	219,839	135,335	274,988	2 03	62
1885 .....	8	519	0	244,769	156,107	325,001	2 08	63 3-4
1886 .....	8	513	5	203,621	127,006	281,778	2 22	62
1887 .....	11	518	50	253,373	159,838	401,168	2 51	63
1888 .....	12	743	0	334,695	199,831	390,182	1 95	60
1889 .....	12	773	0	268,185	157,186	351,132	2 23	58 6-10
1890 .....	12	773	4	275,448	174,295	377,847	2 17	63
1891 .....	13	787	102	309,073	193,711	426,630	2 20	63
1892 .....	14	965	0	315,511	196,359	429,376	2 19	62
1893 .....	13	947	10	281,600	178,049	355,965	2 00	63
1894 .....	14	1,089	0	222,900	140,842	245,154	1 74	63 2-10
1895 .....	14	978	0	385,899	244,815	404,978	1 65	63 4-10

From the above table it will be seen that the production in 1895 was the largest in its history. It increased from 140,842 tons in 1894 to 244,815 tons in 1895. It is probable that the large production is in a measure due to the demand for coke, following the strike in the Flat Top region.

## KANAWHA DISTRICT.

While the Kanawha district is a very important Coking district, producing 104, 160 ton of coke in 1894, and 164, 729 tons in 1895, its importance has been overshadowed by the Flat Top and New River coals already mentioned. The Kanawha Coal Measures are not the same as those furnishing coal for the New River and Flat Top regions. The beds of the Kanawha district correspond to the Lower Measures of Pennsylvania, and need not be described in detail here.

TABLE NO. 30.

*Statistics of the manufacture of Coke in the Kanawha District from 1880 to 1895 inclusive.*

Years.	Establish- ments.	Ovens built.	Ovens build- ing.	Coal used.	Coke produced.	Total value of coke at ovens.	Value of coke at ovens per ton.	Yield of coal in coke.
				Short tons.	Short tons.			Per cent
1880 .....	4	18	0	6,789	4,300	\$9,860	\$2 30	62
1881 .....	4	18	0	11,516	6,900	16,905	2 45	62
1882 .....	5	(a) 138	0	40,782	26,170	62,808	2 40	64
1883 .....	5	(a) 147	0	58,735	37,970	88,090	2 32	64
1884 .....	6	(a) 177	15	60,281	39,000	76,070	1 95	62
1885 .....	7	(b) 181	63	65,348	37,551	61,083	1 68	63½
1886 .....	7	302	170	89,410	54,329	117,649	2 17	62
1887 .....	7	548	0	153,784	96,721	201,418	2 08	63
1888 .....	9	572	8	141,641	84,052	146,837	1 75	60
1889 .....	6	474	0	109,466	63,678	117,340	1 84	58 6-10
1890 .....	6	474	0	182,340	104,076	196,583	1 89	63
1891 .....	6	474	0	241,427	134,715	276,420	2 05	63
1892 .....	6	506	0	242,627	140,641	284,174	2 02	62
1893 .....	6	506	0	215,108	122,241	237,308	1 94	63
1894 .....	6	506	0	176,746	104,160	181,586	1 74	63 2-10
1895 .....	6	506	0	267,520	164,729	270,879	1 64	61 7-10

a Eighty of these ovens are coppes, the balance beehive.

b Sixty of these ovens are coppes, the balance beehive.

## UPPER MONONGAHELA DISTRICT.

The Upper Monongahela district includes the ovens in the group of counties lying along the line of the Baltimore and Ohio railroad, near the head waters of the Monongahela river—Preston, Taylor, Harrison and Marion. The coal used in the district is chiefly from the Pittsburg bed. As mined, the seam is from seven feet six inches, to ten feet thick. The coke produced in this district is good fuel, and though made largely from washed slack it is finding a place in the markets of the country.

The following is an analysis of the foundry coke produced by the Monongah Coal and Coke Company, of Monongah, W. Va., one of the largest coke producers in the region:

*Analysis of foundry coke produced by the Monongah Coal and Coke Company, of Monongah, W. Va.*

	Per Cent.
Moisture .....	0.35
Volatile Matter .....	.70
Ash .....	8.54
Fixed Carbon .....	90.41

Total..... 100.00

Sulphur..... .872

At Austen, Preston county, the Upper Freeport seam, which is here from five to five and one-half feet thick, is coked, making a clear, even silvery coke of a fairly good quality. The following are analyses of the coal and coke as mined at Austen:



## ANALYSES OF AUSTIN, W. VA., COAL AND COKE.

	COAL.	COKE.	
	Per cent.	48 hours Per cent.	72 hours. Per cent.
Fixed Carbon .....	66.28	90.56	87.98
Volatile Matter .....	31.12		
Ash .....	2.48	9.19	11.57
Water .....	.12	.25	.45
Total .....	100.00	100.00	100.00
Sulphur .....	.64	.19	.21

TABLE NO. 31.

*Statistics of the Manufacture of Coke in the Upper Monongahela District, West Virginia, 1880 to 1895.*

Years.	Establish- ments.	Ovens built.	Ovens build- ing.	Coal used.	Coke produced.	Total value of coke at ovens.	Value of coke at ovens per ton.	Yield of coal in coke.
				Short tons.	Short tons.			Per cent.
1880 .....	8	145	0	64,937	36,028	\$ 68,930	2.1.91	
1881 .....	9	172	0	73,863	43,803	78,195	1.78	55
1882 .....	11	222	0	92,510	55,855	105,214	1.88	59
1883 .....	13	269	0	88,253	51,754	90,848	1.76	60
1884 .....	13	281	100	78,468	49,139	74,894	1.52	59
1885 .....	12	267	0	105,416	67,013	97,505	1.52	63
1886 .....	12	275	104	131,896	82,165	113,100	1.45	63 5-10
1887 .....	15	646	0	211,330	132,192	268,990	1.38	62 9-10
1888 .....	17	567	110	213,377	138,097	175,840	2.03	62 5-10
1889 .....	17	674	200	210,083	198,685	171,511	1.27	64 7-10
1890 .....	18	1,051	50	276,367	167,459	260,574	1.33	62 5-10
1891 .....	15	1,081	56	517,615	291,605	462,677	1.56	60
1892 .....	19	1,129	45	441,266	265,363	390,296	1.58	56
1893 .....	19	1,158	42	379,506	225,676	295,123	1.47	60 1-10
1894 .....	20	1,221	42	280,748	158,623	179,525	1.31	59
1895 .....	20	1,260	47	392,297	240,637	265,293	1.13	56 5-10
							1.10	61 6-10

The above table tells the usual story regarding the production of coke in 1894-5. It has increased more than 82,000 tons as compared with 1894, and for the same reasons that increased production in the other districts.

## UPPER POTOMAC DISTRICT.

What we have termed the Upper Potomac district includes the ovens along the line of the West Virginia Central and Pittsburgh Railway, running south from near Cumberland, Md. This region is an extension southwardly of the well known Cumberland region, though in

the Upper Potomac portion of the extension the Cumberland or Big Vein coal is not found, the coal mined being regarded until recently as the Upper Freeport and Lower Kittanning, the former known locally as the Thomas and the latter as the Davis vein. Mr. John Fulton has recently stated that he believes the two benches of the Davis vein instead of being one seam of coal are two of the Pennsylvania seams with a very thin parting of slate. Speaking of them, however, under the names by which they have been usually known, the Upper Freeport (Thomas) vein measures nearly eight feet, with from four to six feet of merchantable coal, while the (Lower Kittanning Daves) vein measures 11 feet, and works 6½ feet, and is remarkably low in sulphur. Describing the two coals as they occur in this field, Prof. I. C. White, in a report made to Hon. H. G. Davis, president of the West Virginia Central and Pittsburg Railway Company, says:

The Upper Freeport coal is one of the regular, persistent and valuable beds of the coal measures, and it nearly always furnishes a quality of fuel that makes excellent coke. It has long been coked successfully in the Broad Top, Clearfield, and other regions of Pennsylvania. It has a thickness of nearly eight feet from roof to floor in the Upper Potomac field, but a bony coal and slate just above the center of the bed render a portion of this thickness unavailable, so that seldom more than six feet of merchantable coal can be obtained from this seam. The upper portion of this bed comes out in good sized lumps and will make a good shipping coal, while the lower bench is softer and will make good coke. This bed goes under the Potomac near Bogard, and underlies the entire basin from that point to Thomas, a distance of 15 miles, while the width across, from one outcrop to the other varies from three to four miles.

At a vertical distance of 170 feet below the floor of the Upper Freeport coal we come to the roof of the valuable coal in the basin, the one which has been referred to under the name of Lower Kittanning or "Davis seam." The entire thickness of this bed is about 11 feet, but as the bottom bench is separated from the middle or main one by a slate of considerable thickness, the lowest ply of coal, which is nearly 3 feet thick, is not usually mined, since there is 6 feet of clean coal above this after it has been freed from all slates, of which there are two streaks in the upper position of the bed, but they both come out without trouble, taking with them of coal, slate, and all only 8 inches from the thickness of the bed, leaving, as just stated, exactly 6 feet of coal free from impurities.

The Lower Kittanning coal in the Upper Potomac region is one of the purest beds with which we are acquainted any where in the country, being singularly free from sulphur, so much so in fact that it already has a great reputation as a smithing coal, being as highly prized for the purpose as the Blossburg coal of Pennsylvania, with which bed, strange to say, it seems to be exactly identical.

The following are analyses of these coals made by the United States Geological Survey from full sections:

	Thomas (Upper Freeport).			Davis (Lower Kittanning.	
	Upper.	Middle.	Bottom.	No. 1.	No. 2.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Moisture.....	0.64	0.68	0.96	0.80	0.70
Volatile Matter.....	22.87	23.88	22.90	26.84	22.03
Fixed Carbon.....	65.60	65.99	72.76	67.18	70.53
Ash.....	10.89	9.45	3.38	5.18	6.74
Total.....	100.00	100.00	100.00	100.00	100.00
Sulphur.....	.64	1.39	.59	1.68	.924
Phosphorus.....	.06	1.02	.01		

An analysis of the Davis from the mines of the Cumberland Coal Company's Douglas mine made, by the chemist of the Fremont Nail Company at Waseham, Mass., is as follows:

#### ANALYSIS OF DAVIS COAL AT DUGLAS, W. VA.

	Per Cent.
Moisture.....	1.10
Volatile Matter.....	22.65
Fixed Carbon.....	69.68
Ash.....	6.57
Total.....	100.00

Though all three seams of coal mined in the Elk Garden and Upper Potomac regions are Coking Coals, only two are coked, the Thomas (Upper Freeport) and Davis (Lower Kittanning,) and chiefly the latter. In addition to its being more valuable as a steam than as a coking coal, the big vein is lower in volatile matter than either the Thomas or Davis veins, and does not coke as readily.

Slack or fine coal only is used, experience having shown that the run of mine or lump does not yield as good a coke. The charge is  $5\frac{1}{2}$  tons for 48 hour coke and  $6\frac{1}{2}$  tons for 72 hour. The actual yield of coke by weight at the Coketon plant, using the Davis seam, is over 67 per cent. The coke is a bright, silvery, porous, hard fuel, and has a most excellent reputation for foundry uses because of its physical characteristics and low sulphur. It is shipped largely for this purpose to South America. It is also an excellent blast-furnace fuel, and when selected and crushed, has a large sale for domestic purposes.

Analyses of Coke made from the Davis seam at Coketon, West Virginia:

	48 hour.	72 hour.	48 hour.	72 hour.	48 hour.	72 hour.	48 hour.	72 hour.	48 hour.	72 hour.
Water.....	0.25	0.16	trace	trace	trace	trace	trace	trace	0.84	1.20
Volatile Matter.....	.86	1.17	1.48	1.36	0.310	0.320	1.81	2.51	2.02	1.88
Fixed Carbon.....	89.08	92.30	90.19	92.31	90.765	90.835	88.72	90.11	89.	90.90
Ash.....	9.81	6.37	8.33	6.33	3.925	8.845	9.47	6.80	9.14	6.52
Total.....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sulphur.....	.60	.54	.90	.84	.752	.725	.53	.58	.191	.147
Phosphorus.....	.06	.04	.081	.021	.034	.037	.038	.013	.030	.009
Chemist.....	U.S. Geolog- ical survey.		Hunt and Clapp.		Booth and Garrett.		Riverside Iron Co.		Hugo Blank.	

The average of above analysis is as follows:

*Average of Ten Samples of Coketon Coke.*

	48 hour. Per cent.	72 hour. Per cent.
Water.....	0.218	0.39
Volatile matter.....	1.296	1.348
Fixed Carbon.....	89.352	91.291
Ash.....	9.134	6.971
Total.....	100.00	100.00
Sulphur.....	.5946	.566
Phosphorus.....	.0366	.024

The analyses by Dr. Hugo Blank, of Pittsburg, are quoted from a report of Prof. I. C. White. The sulphur is questionable in these analyses. The statistics of the production of coke in the Upper Potomac district are as follows:

TABLE NO. 32.

*Statistics of the Manufacture of Coke in the Upper Potomac District of West Virginia, 1887 to 1895.*

Years.	Establish- ments.	Ovens built.	Ovens building.	Coal used.	Coke produced	Total value of Coke at Ovens.	Value of Coke at Ovens per ton.	Yield of Coal in Coke.
				Short tons.	Short tons.			Per cent.
1887.....	1	20	50	3,565	2,211	\$ 4,422	\$ 2.00	62
1888.....	1	28	0	9,176	5,835	8,752	1.50	64
1889.....	2	84	0	26,105	17,945	28,559	1.58	69
1890.....	2	178	28	94,983	61,971	118,503	1.91	65
1891.....	2	390	39	111,014	76,599	133,549	1.75	69
1892.....	3	395	0	114,045	78,691	121,208	1.54	69
1893.....	3	394	0	123,492	84,607	115,250	1.36	68.5
1894.....	2	394	0	66,598	43,546	43,546	1.00	65.4
1895.....	2	442	0	183,187	110,753	126,595	1.14	60.5

The increase in the production in the district in 1895 over that of 1894 is a notable one, the production in 1895 being 110,753 tons and in 1894 but 43,546 tons, an increase of 67,207 tons, or nearly 155 per cent. While it is probable that the strike in the Flat Top region is in a measure responsible for this great increase of production, there can be no doubt that this coking district is assuming greater importance in the markets of the country.

### PRODUCTION OF COKE IN WEST VIRGINIA BY DISTRICTS.

In the following table will be found consolidated the statistics of the production of Coke in the four years especially covered by this report, viz., 1892, 1893, 1894 and 1895, by districts.

TABLE NO. 33.

*Production of Coke in West Virginia in 1895, by Districts*

DISTRICTS.	Estab-lish-ments.	Ovens built.	Ovens building.	Coal used.	Coke produced	Total value of Coke produced	Average value of Coke per ton.	Yield of Coal in Coke.
				<i>sh'rt tons</i>	<i>sh'rt tons</i>			<i>per cent.</i>
Kanawha.....	6	506		182,420	106,112	\$ 182,110	\$ 1 74	52.2
New River.....	14	1,089		225,450	142,116	246,112	1 73	63.3
Flat Top.....	36	5,080	20	1,330,140	887,996	1,126,125	1 268	66.7
Northern.....	20	1,221	42	281,428	159,312	180,022	1 13	56.6
Upper Potomac	2	394		67,146	43,995	43,995	1 00	65.6
Total.....	80	8,290	62	2,086,584	1,339,531	\$ 1,778,364	1 327	64.2

TABLE NO. 34.

*Production of Coke in West Virginia in 1894, by Districts.*

DISTRICTS.	Estab-lish-ments.	Ovens built.	Ovens building.	Coal used.	Coke pro-duced.	Total value of coke pro-duced.	Average price of coke per ton.	Yield of coal in coke
				<i>sh'rt tons</i>	<i>sh'rt tons</i>			<i>per cent.</i>
Kanawha.....	6	506		176,746	104,160	\$ 181,586	\$ 1.74	58.9
New River.....	14	1,089		222,900	140,842	245,154	1.74	63.2
Flat Top.....	36	4,648	18	1,229,136	746,762	989,876	1.33	60.7
Northern.....	20	1,221	42	280,748	158,623	179,525	1.13	56.5
Upper Potomac	2	394		66,598	43,546	43,546	1.00	65.4
Total.....	78	7,958	60	1,976,128	1,193,933	\$ 1,639,697	\$ 1.372	60.4

TABLE NO. 35.

*Production of Coke in West Virginia in 1893, by Districts.*

Districts.	Estab-lish-ments.	Ovens built.	Ovens building.	Coal used.	Coke Pro-duced.	Total Value of Coke Pro-duced.	Average of Coke per ton	Yield of Coal in Coke.
				<i>Short Tons.</i>	<i>Short Tons.</i>			<i>Per cent.</i>
Kanawha.....	6	506	0	215,108	122,241	\$237,308	\$1 94	56.8
New River.....	13	947	10	281,600	178,049	355,965	2 00	63.
Flat Top.....	34	4,349	80	746,051	451,503	713,261	1 58	60.2
Northern.....	19	1,158	42	379,505	225,676	295,123	1 31	59.
Upper Potomac..	3	394	0	123,492	84,607	115,250	1 36	68.2
Total.....	75	7,354	132	1,745,757	1,062,076	\$1,716,907	1 62	60.5

TABLE NO. 36.

*Production of Coke in West Virginia in 1892 by Districts.*

DISTRICTS.	Estab-lish-ments	Ovens built.	Ovens building.	Coal used.	Coke produced	Total value of coke produced	Average price of coke per ton.	Yield of coal in coke.
				<i>short tons</i>	<i>short tons</i>			<i>Per cent.</i>
Kanawha.....	6	506		242,827	140,641	\$ 284,174	\$ 2 03	58.
New River.....	14	965		315,511	196,359	429,376	2 19	62.
Flat Top.....	30	2,948	933	595,734	353,696	596,911	1 69	59.3
Northern.....	19	1,129	45	441,266	265,383	390,296	1 47	61.1
Upper Potomac	3	395		114,045	78,691	121,208	1 54	69.
Total.....	72	5,843	978	1,709,183	1,034,750	\$1,821,965	\$ 1 76	60.5

TABLE NO. 37.

*Statistics of the manufacture of Coke in West Virginia, 1880 to 1895.*

Years.	Estab-lish-ments.	Ovens built.	Ovens building.	Coal used.	Coke produced.	Total value of coke at ovens.	Value of coke at Ovens per tons.	Yield of coal in coke.
				<i>Short tons.</i>	<i>Short tons.</i>			<i>Per cent.</i>
1880.....	18	631	40	230,758	138,755	\$ 318,797	\$ 2 30	60
1881.....	19	689	0	304,823	187,126	429,571	2 31	61
1882.....	22	878	0	366,653	220,394	520,437	2 26	63
1883.....	24	962	9	411,159	257,519	563,490	2 19	63
1884.....	27	1,005	127	385,588	223,472	425,952	1 91	62
1885.....	27	978	63	415,533	260,571	485,588	1 86	63
1886.....	29	1,100	317	425,002	264,158	513,843	1 94	62
1887.....	39	2,080	742	698,327	442,031	976,732	2 21	63.3
1888.....	51	2,764	318	854,531	525,927	896,797	1 71	61.5
1889.....	53	3,434	631	1,001,372	607,880	1,774,177	1 76	60
1890.....	55	4,060	334	1,395,266	833,377	1,524,746	1 83	60
1891.....	55	4,621	555	1,716,976	1,009,051	1,845,043	1 83	58.8
1892.....	72	5,843	978	1,709,183	1,034,750	1,821,965	1 76	60.5
1893.....	75	7,354	132	1,745,757	1,062,076	1,716,907	1 62	60.8
1894.....	78	7,858	60	1,976,128	1,193,933	1,639,687	1.373	60.4
1895.....	78	7,834	55	2,087,816	1,385,206	1,724,239	1 34	61.6

It will be noted from the above statement that the production of coke in West Virginia increased 131,857 tons in 1894, over that of

1893, and an increase of 91,263 tons in 1895 over that of 1894, though, owing to the reduced value per ton, the value of the coke at the ovens was somewhat less.

TABLE NO. 38.

*The Character of the Coal Used in the Manufacture of Coke since 1890 is Shown in the Following Table.*

Years.	Run of Mine.		Slack.		Total.
	Unwashed.	Washed.	Unwash d.	Washed.	
	Short tons.	Short tons.	Short tons.	Short tons.	Short tons.
1890.....	324,847	00	930,998	99,430	1,355,266
1891.....	276,250	00	1,116,090	324,657	1,716,976
1892.....	298,824	115,397	1,108,353	186,609	1,709,183
1893.....	324,932	15,240	1,176,656	228,929	1,745,757
1894.....	162,270	14,901	1,607,735	191,222	1,976,128
1895.....	405,725	21,054	1,476,003	132,034	2,037,816

## COKE.

[The ton used in this report is uniformly the short ton of 2,000 pounds.]

### Introduction.

The coal used in coking in the United States is mined from all five of its great coal fields: (1) The Appalachian; (2) the Central; (3) the Western; (4) the Rocky Mountain, and (5) the Pacific coast. With the exception of that made from the coals of the Appalachian field, however, the tonnage of coke produced in the United States is quite small, but 445,473 tons of the total of 13,333,714 tons made in 1895, or about 3.34 per cent., being produced outside of this field. While the production in the fields outside of the Appalachian region is quite small in percentage, it is really a growing one, the amount there made in 1895 being somewhat larger than the amount produced in 1893 or 1894.

### Production of Coke in the United States.

In the following table will be found a statement of the production of coke in the United States in 1895, by States, followed, for purposes of comparison, by similar tables for 1894 and 1893:

TABLE NO. 39.

*Manufacture of Coke in the United States, by States and Territories, in 1895.*

State or Territory	Estab- lish- ments	Ovens.		Coal Used.	Yield of coal in coke.	Coke pro- duced.	Total value of coke.	Value of coke per ton.
		Built.	Build- ing.					
				<i>Short tons.</i>	<i>Per ct.</i>	<i>Short tons.</i>		
Alabama.....	22	5,658	50	2,459,465	58.7	1,444,339	\$3,032,521	\$2 10
Colorado (a).....	9	61,169	0	580,584	58.6	340,357	940,987	2.76
Georgia.....	1	330	0	118,900	50.6	60,212	70,580	1.70
Illinois.....	3	129	0	3,600	62.5	2,250	4,500	2.00

a Includes Utah's production of coal and coke and value of same. b Includes 36 gas retorts

TABLE NO. 40:

*Manufacture of Coke in the United States, by States and Territories, in 1895. —Continued.*

State or Territory	Estab- lish- ments.	Ovens.		Coal Used.	Yield of coal in coke.	Coke pro- duced.	Total value of coke.	Value of coke per ton.
		Built.	Build- ing.					
				<i>Short tons.</i>	<i>Per ct.</i>	<i>Short tons.</i>		
Indiana.....	2	94	0	9,898	48.5	4,804	\$9,333	\$1.94
Indian Territory.....	1	80	0	11,825	43.8	5,175	17,657	3.41
Kansas.....	5	55	0	8,424	62.3	5,287	11,299	2.14
Kentucky.....	5	293	0	63,419	40.1	25,480	37,349	1.46
Missouri.....	3	10	0	3,120	65	2,028	2,442	1.20
Montana.....	3	303	0	55,770	45.4	25,337	189,856	7.49
New Mexico.....	1	50	0	22,385	65.5	14,663	29,491	2.01
New York.....	1	12	13	42,207	83.4	18,521		
Ohio.....	8	377	0	51,921	56	29,050	69,655	2.40
Pennsylvania.....	99	26,042	170	14,211,567	68.2	9,401,215	11,908,162	1.226
Tennessee.....	12	1,903	0	684,655	57.9	396,790	754,926	1.90
Texas.....	1	6	0	530	54	286		
Utah.....	1	84	0			22,519		
Virginia.....	5	832	350	410,737	59.6	244,738	322,564	1.32
Washington.....	3	110	0	22,975	65.9	15,129	64,632	4.27
West Virginia.....	78	7,834	55	2,087,816	61.6	1,285,206	1,724,239	1.34
Wisconsin.....	1	120	0	8,287	60	4,972	25,103	5.25
Wyoming.....	1	74	0	10,240	47.8	4,895	17,133	3.50
Total.....	265	45,565	633	20,818,323	54	13,333,714	19,234,319	1.44

a Included with Colorado's coke production.

From this table it appears that the total production of coke in the United States in 1895 was 13,333,741 tons, as compared with 9,203,632 tons in 1894, 9,477,580 tons in 1893, and 12,010,829 tons in 1892. Just as the production in 1894 was the smallest in the history of coking in the United States since 1888, so the production in 1895 was the largest in its history, the nearest approach being in 1892. This great increase in production in 1895 is due to the greatly increased production of pig iron last year, just as the decline in 1894 was due to the decrease in pig-iron production. The total production of pig iron in the United States smelted with coke exclusively, or with a mixture of coke and anthracite, in 1894 was 6,314,891 long tons. In 1895 it was 9,164,365 tons, an



increase of practically 50 per cent. The increase in the production of coke in 1895 was very nearly the same as the increase in the production of pig iron smelted with coke or with a mixture of coke and anthracite.

In the following tables are given, by States, a statement of the production of coke in the United States in 1893 and 1894:

TABLE NO. 41.

*Manufacture of Coke in the United States, by States and Territories, in 1894.*

State or Territory.	Estab- lish- ments.	Ovens.		Coal used.	Yield of coal in coke.		Coke pro- duced.	Total value of coke.	Value of coke per ton.
		Built.	Build- ing.		Per ct.	Short tons			
Alabama.....	22	5,551	50	1,574,245	58.7	923,817	\$ 1,871,348	\$ 2.025	
Colorado (a).....	8	51,154	250	542,429	58.5	377,196	903,970	2.85	
Georgia.....	1	338	0	166,523	55.9	93,029	116,286	1.25	
Illinois.....	1	24	0	3,800	57.9	2,200	4,400	2.00	
Indiana.....	2	94	0	13,489	48.6	6,551	13,102	2.00	
Indian Territory.	1	80	0	7,274	42	3,051	10,693	3.50	
Kansas.....	6	61	0	13,288	63.5	8,439	15,660	1.855	
Kentucky.....	6	293	0	66,418	44.8	29,748	51,566	1.73	
Missouri.....	3	10	0	3,442	65.4	2,250	3,563	1.58	
Montana.....	2	153	0	33,313	52.2	17,388	166,187	9.50	
New Mexico.....	1	50	0	13,042	50	6,529	28,213	4.32	
Ohio.....	8	363	0	55,324	59	32,640	90,875	2.78	
Pennsylvania.....	101	25,824	118	9,059,118	66.9	6,063,777	6,585,489	1.086	
Tennessee.....	11	1,880	0	516,802	56.6	292,646	480,124	1.64	
Utah.....	1	83	0	.....	.....	c 16,056	.....	.....	
Virginia.....	2	736	100	280,524	64.2	180,091	295,747	1.84	
Washington.....	3	84	0	8,563	61.2	5,245	18,249	3.48	
West Virginia.....	78	7,858	60	1,976,128	60.4	1,193,933	1,639,687	1.373	
Wisconsin.....	1	120	0	6,343	67	4,250	19,465	4.58	
Wyoming.....	1	24	0	8,685	50	4,352	15,232	3.50	
Total.....	259	44,760	578	14,348,750	64	9,187,132	12,328,856	1.84	
New York.....	1	12	13	.....	.....	16,500	.....	.....	
	260	44,772	591	.....	.....	9,203,632	.....	.....	

a Includes Utah's production of coal and coke and value of same.

b Includes 36 gas retorts.

c Included with Colorado's coke production.

TABLE NO. 42.

*Manufacture of Coke in the United States, by States and Territories, in 189*

State or Territory	Estab-lish-ments.	Ovens.		Coal used.	Yield of coal in coke.	Coke pro-duced	Total value of coke..	Value of coke per ton.
		Built.	Built in fl					
				<i>Short tons</i>	<i>Per ct.</i>	<i>Short tons</i>		
Alabama.....	23	5,548	60	2,015,399	58	1,168,095	\$ 2,618,632	\$ 2.27
Colorado (a).....	8	b 1,154	200	628,935	57.7	361,984	1,137,488	3.13
Georgia.....	1	338	0	171,615	52.8	90,726	136,089	1.50
Illinois.....	1	24	0	3,300	66.7	2,200	4,400	2.00
Indiana.....	2	94	0	11,549	49.6	5,724	9,048	1.58
Indian Territory.....	1	80	0	15,118	47	7,135	25,072	3.51
Kansas.....	6	75	0	13,645	62.8	8,595	18,640	2.18
Kentucky.....	4	253	100	97,212	50	48,619	97,350	2.00
Missouri.....	3	10	0	8,875	66.5	5,905	9,735	1.65
Montana.....	2	153	0	61,770	48.5	29,945	239,570	8.00
New Mexico.....	1	50	0	14,698	39.5	5,803	18,476	3.18
New York.....	1	12	0	15,150	84.8	12,850	35,925	2.50
Ohio.....	9	435	0	42,963	52	22,439	43,611	1.95
Pennsylvania.....	102	25,744	19	9,386,702	66	6,229,051	9,468,036	1.52
Tennessee.....	11	1,942	0	449,511	59	265,777	491,523	1.25
Utah.....	1	83	0			a 16,005		
Virginia.....	2	594	206	194,059	64.5	125,092	282,898	2.26
Washington.....	3	81	0	11,374	59	6,731	34,907	5.09
West Virginia.....	75	7,354	132	1,745,757	63.8	1,062,074	1,716,907	1.62
Wisconsin.....	1	120	0	24,085	62	14,958	95,851	6.41
Wyoming.....	1	24	0	5,400	54	2,916	10,206	3.50
Total.....	253	44,201	717	14,917,146	63.5	9,477,580	16,522,714	1.74

a Includes Utah's production of coal and coke and value of same..

b Includes 36 gas retorts.

a Included with Colorado's coke production.

It will be noted by reference to these three tables that Pennsylvania maintains its supremacy as the chief coke producing State in the Union, its production in 1892 being 69 per cent of the total; in 1893, 65.7 per cent; in 1894, 65.9 per cent, and in 1895, 70.5 per cent. West Virginia produced in 1894 about 13 per cent of the total production and in 1895 only a little over 9.6 per cent, while Alabama, which produced 10 per cent of the total in 1894, produced about 10.9 per cent in 1895. Tennessee produced in 1895 about 3 per cent of the total, as compared with 3.2 per cent in 1894. Colorado follows Tennessee closely, producing in 1895 about 2.4 per cent of the total. Virginia's proportion of the total in 1895 was the same as in 1894, being about 2 per cent.

Comparing the tonnage of the States in 1894 and 1895 it will be seen that all of the six chief coke-producing States increased their total production in 1895 over 1894. The increased production in Pennsylvania, 1895 over 1894 was 3,340,438 tons, or 55 per cent; in West Virginia, 91,273 tons, or 8 per cent; in Alabama, 520,522 tons, or 56 per cent; in Tennessee, 104,144 tons, or about 36 per cent; in Colorado, 16,698 tons, or 5½ per cent, and in Virginia, 64,647 tons, or nearly 36 per cent.

TABLE NO. 43.

In the following table are consolidated the statistics of the manufacture of coke in the United States from 1880 to 1895, inclusive:

*Statistics of the manufacture of coke in the United States, 1880 to 1895, inclusive.*

Year.	Establishments.	Ovens.		Coal used.	Coke produced.	Total value of coke at ovens.	Value of coke at ovens, per ton.	Yield of coal in coke.
		Built.	B'ld-ing.					
				Short tons	Short tons.			per ct.
1880.....	186	12,372	1,159	5,237,741	3,338,300	\$6,631,267	\$1 99	63
1881.....	197	14,119	1,005	6,516,662	4,113,759	7,725,175	1 88	63
1882.....	215	16,356	712	7,577,618	4,793,321	8,462,167	1 77	63
1883.....	231	18,304	407	8,516,670	5,464,721	8,121,607	1 49	64
1884.....	250	19,557	812	7,951,974	4,873,805	7,242,878	1 49	61
1885.....	233	20,116	432	8,071,126	5,106,696	7,629,118	1 49	63
1886.....	222	22,597	4,154	10,688,972	6,845,369	11,153,366	1 63	64
1887.....	270	26,001	3,584	11,859,752	7,611,705	15,321,166	2 01	64
1888.....	261	30,039	2,587	12,915,351	8,540,030	12,445,563	1 46	66
1889.....	252	34,165	2,115	15,930,973	10,258,022	14,631,301	1 62	64
1890.....	253	37,158	1,547	18,005,209	11,508,021	23,215,302	2 02	64
1891.....	243	40,245	911	16,344,540	10,352,688	20,393,216	1 97	63
1892.....	261	42,002	1,893	18,813,387	12,010,829	23,566,141	1 96	64
1893.....	258	44,201	711	14,917,146	9,477,580	16,523,714	1 74	63.5
1894.....	260	44,772	591	21,348,750	9,203,632	21,328,856	1 34	64
1895.....	265	45,565	638	20,848,323	13,333,714	21,924,319	1 41	64

*a*Excluding New York.

*b*Excluding New York and Texas.

### Total Number of Coke Works in the United States.

The following table gives the number of establishments manufacturing coke in the United States at the close of each year from 1880 to 1895, by States:

TABLE 44.

*Number of establishments in the United States manufacturing coke on December 31 of each year from 1880 to 1895.*

State or Territory.	1880	1881	1882	1883	1884	1885	1886	1887
Alabama.....	4	4	5	6	8	11	14	15
Colorado.....	1	1	5	7	8	7	7	7
Georgia.....	1	1	1	1	1	2	2	2
Illinois.....	6	6	7	7	9	9	9	8
Indiana.....	2	2	2	2	2	2	4	4
Indian Territory.....	1	1	1	1	1	1	1	1
Kansas.....	2	3	3	4	4	4	4	4
Kentucky.....	5	5	5	5	5	5	6	6
Missouri.....	0	0	0	0	0	0	0	1
Montana.....	0	0	0	1	3	2	4	2
New Mexico.....	0	0	2	2	2	2	2	1
New York.....	15	15	16	18	19	13	15	15
Ohio.....	121	132	137	140	145	133	108	151
Pennsylvania.....	6	6	8	11	13	12	12	11
Tennessee.....	0	0	0	0	0	0	1	0
Texas.....	1	1	1	1	1	1	1	0
Utah.....	0	0	0	0	1	1	2	2
Virginia.....	0	0	0	0	1	1	1	1
Washington.....	0	0	0	0	0	0	0	0
West Virginia.....	18	19	22	24	27	27	29	39
Wisconsin.....	0	0	0	0	0	0	0	0
Wyoming.....	0	0	0	0	0	0	0	0
Total.....	186	197	215	231	250	233	222	270

TABLE NO. 45.

*Number of establishments in the United States manufacturing coke on December 31 of each year from 1880 to 1895.—Continued.*

State or Territory.	1888	1889	1890	1891	1892	1893	1894	1895
Alabama.....	18	19	20	21	20	23	22	22
Colorado.....	7	9	8	7	9	8	8	9
Georgia.....	1	1	1	1	1	1	1	1
Illinois.....	8	4	4	1	1	1	1	3
Indiana.....	3	4	4	2	2	2	2	2
Indian Territory.....	1	1	1	1	1	1	1	1
Kansas.....	6	6	7	6	6	6	6	5
Kentucky.....	10	9	9	7	5	4	6	5
Missouri.....	1	3	3	3	3	3	3	3
Montana.....	1	2	2	2	2	2	2	3
New Mexico.....	1	2	2	1	1	1	1	1
New York.....						1	1	1
Ohio.....	15	13	13	9	10	9	8	8
Pennsylvania.....	120	109	106	109	109	102	101	99
Tennessee.....	11	12	11	11	11	11	11	12
Texas.....	0	0	0	0	0	0	0	1
Utah.....	0	1	1	1	1	1	1	1
Virginia.....	2	2	2	2	2	2	2	5
Washington.....	3	1	2	2	3	3	3	3
West Virginia.....	52	53	55	55	72	75	78	78
Wisconsin.....	1	1	1	1	1	1	1	1
Wyoming.....	0	1	1	1	1	1	1	1
Total.....	261	253	253	243	261	258	260	265

The word "establishment" is rather an indefinite one. In some cases proprietors of coke works owning several different banks or blocks of ovens will report them all as one establishment, they being under one general management. In other cases they will be reported separately. The number differs so much from year to year as to make this table of but little value for comparison.

The number of establishments in the country for each year since 1850 for which there are any returns is as follows :

TABLE NO. 46.

*Number of coke establishments in the United States since 1850.*

Year.	Number.	Year.	Number.
1850 (census year).....	4	1886, December 31.....	222
1860 (census year).....	21	1887, December 31.....	270
1870 (census year).....	25	1888, December 31.....	261
1880 (census year).....	149	1889, December 31.....	253
1880, December 31.....	186	1890, December 31.....	253
1881, December 31.....	197	1891, December 31.....	243
1882, December 31.....	215	1892, December 31.....	261
1883, December 31.....	231	1893, December 31.....	258
1884, December 31.....	250	1894, December 31.....	260
1885, December 31.....	233	1895, December 31.....	265

### Number of Coke Ovens in the United States.

The following table shows the number of coke ovens in each State and Territory on December 31 of each year from 1880 to

1895, together with the total number of ovens in the United States at the close of each of these years. In the earlier years covered by this table some coke was made in pits and on the ground, and in testing the adaptability of certain coals to the manufacture of coke this is still customary, though in the latter years but little of the coke reported as produced in the United States was made by any other method than in ovens.

TABLE NO. 47.

Number of coke ovens in the United States on December 31 of each of the years from 1880 to 1895.

State or Territory.	1880	1881	1882	1883	1884	1885	1886	1887
Alabama.....	316	416	536	767	978	1,075	1,801	1,555
Colorado.....	207	267	344	352	409	434	483	532
Georgia.....	140	180	220	264	300	300	300	300
Illinois.....	176	176	304	316	325	320	835	273
Indiana.....	45	45	37	37	37	37	100	119
Indian Territory.....	20	20	20	20	20	40	40	80
Kansas.....	6	15	20	23	23	23	36	39
Kentucky.....	45	45	45	45	45	33	76	98
Missouri.....	0	0	0	0	0	0	0	4
Montana.....	0	0	0	2	5	2	16	27
New Mexico.....	0	0	0	12	70	70	70	70
New York.....								
Ohio.....	616	641	647	682	732	612	560	585
Pennsylvania.....	9,501	10,881	12,424	13,610	14,285	14,553	16,314	18,294
Tennessee.....	656	724	861	996	1,105	1,387	1,485	1,560
Texas.....								
Utah.....	20	20	20	20	20	20	20	0
Virginia.....	0	0	0	200	200	200	350	350
Washington.....	0	0	0	0	0	2	11	30
West Virginia.....	631	659	878	6 62	1,005	978	1,100	2,080
Wisconsin.....	0	0	0	0	0	0	0	0
Wyoming.....	0	0	0	0	0	0	0	0
Total.....	12,372	14,119	16,356	18,304	19,557	20,116	22,597	26,001

TABLE NO. 48.

Number of coke ovens in the United States on December 31 of each of the years from 1880 to 1895—Continued.

State or Territory.	1888	1889	1890	1891	1892	1893	1894	1895
Alabama.....	2,475	3,944	4,805	5,063	5,320	5,548	5,551	5,658
Colorado.....	602	834	916	918	1,128	1,154	1,154	1,169
Georgia.....	290	300	300	300	300	338	338	330
Illinois.....	221	149	148	25	24	24	24	129
Indiana.....	103	111	101	84	84	94	94	94
Indian Territory.....	80	78	78	80	80	80	80	80
Kansas.....	58	68	68	72	75	75	61	55
Kentucky.....	132	166	175	115	287	283	293	293
Missouri.....	4	9	10	10	10	10	10	10
Montana.....	40	90	140	140	153	153	153	303
New Mexico.....	70	70	70	60	50	50	50	50
New York.....						612	612	612
Ohio.....	547	462	443	421	436	435	363	377
Pennsylvania.....	20,381	22,143	23,430	25,324	25,366	25,744	25,824	26,042
Tennessee.....	1,634	1,639	1,664	1,995	1,941	1,942	1,860	1,903
Texas.....								6
Utah.....	0	34	80	80	83	83	83	84
Virginia.....	550	550	550	550	594	591	736	832
Washington.....	30	30	30	80	84	84	84	110
West Virginia.....	2,792	3,438	4,060	4,621	5,843	7,354	7,858	7,834
Wisconsin.....	50	50	70	120	120	120	120	120
Wyoming.....	0	0	20	24	24	24	24	74
Total.....	30,059	34,165	37,158	40,057	42,002	44,201	44,772	45,585

a Includes 36 gas retorts.

b Coke was made in pits.

c Semet-Solvay ovens.

d Includes 60 Otto-Hoffman ovens.

From the above table it will be noted that the total number of coke ovens in the United States increased from 44,772 in 1894 to 45,565 in 1895. As we have heretofore stated, a calculation based on this table and the one showing production indicates that ovens in certain States were in more active operation than those in other States. For instance, Alabama in 1895 had 5,658 ovens, while West Virginia had 7,834, and yet Alabama, with its smaller number of ovens, produced a larger amount of coke. The product per oven in West Virginia in 1895 was 164 tons, in Alabama 255 tons, and in Pennsylvania 361 tons. In 1894 the product per oven in these States was, in West Virginia, 152 tons, in Alabama 166 tons, and in Pennsylvania 235 tons.

Most of the coke ovens in the United States are of the solid-wall type, in which the coal is coked by heat generated in the oven itself. Most of these ovens are of the regular beehive shape. A few are somewhat modified in form, the oven being long and shaped like a muffle. Other ovens, while they retain the beehive form, have hollow tiles near the top into which the air previously heated enters for combustion.

At the close of 1895 there were in operation in the United States, in addition to the 12 Semet-Solvay ovens that have been operated for the past two years at Syracuse, 60 Otto-Hoffman ovens at Johnstown, Pa., while 50 Semet-Solvay ovens were in course of construction at Dunbar, Pa., 50 more of the same type at Sharon, Pa., and the foundations were in for 60 additional Otto Hoffmann ovens at Johnstown. Three ovens on the Slocum principle, which is like all of the horizontal ovens, a modified Carves, were built at Bolivar, Pa., and 30 by-product beehive ovens on the Newton-Chambers system were nearly finished at Latrobe, Pa. Since the close of 1895 Mr. H. M. Whitney has completed arrangements to erect a large number of by-product ovens on the Slocum principle at Boston, the chief object being the saving of the gas for fuel and illuminating purposes, Mr. Whitney having made a contract with the Boston Gas Company to supply them with all of the gas they will use for a term of years. The Illinois Steel Company have also arranged with Mr. Huessener for the erection of a bank of modified Huessener ovens, which will be located either in the Connellsville region or at their works at South Chicago. Other blocks of ovens are contemplated, but, so far as has been learned, these are the only ones that are absolutely under construction.

#### NUMBER OF OVENS BUILDING IN THE UNITED STATES.

The following table gives the number of ovens actually in course of construction of the close of each year from 1880 to 1895. It should be understood that this table does not include the increase in the number of ovens during the year. It only gives the number of ovens actually in course of construction at the close of each year. It will be noted that the number in course of erection at the close of 1895 was 638.

TABLE NO. 50.

*Number of coke ovens building in the United States at the close of each of the years from 1880 to 1895.*

State or Territory.	1880	1881	1882	1883	1884	1885	1886	1887
Alabama.....	100	120	0	122	242	16	1,012	1,362
Colorado.....	50	0	0	0	24	0	0	0
Georgia.....	40	40	44	36	0	0	0	0
Illinois.....	0	0	0	0	0	0	0	0
Indiana.....	0	0	0	0	0	0	18	0
Indian Territory.....	0	0	0	0	0	0	0	0
Kansas.....	0	0	0	0	0	0	2	0
Kentucky.....	0	0	0	0	0	0	0	0
Missouri.....	0	0	0	0	12	0	0	0
Montana.....	0	0	12	28	0	0	0	0
New Mexico.....	0	0	0	0	0	0	0	0
New York.....	25	0	0	0	0	0	0	223
Ohio.....	836	761	642	211	232	317	2,558	862
Pennsylvania.....	68	84	14	10	175	36	126	165
Tennessee.....	0	0	0	0	0	0	0	0
Texas.....	0	0	0	0	0	0	100	300
Virginia.....	0	0	0	0	0	0	21	0
Washington.....	40	0	0	0	127	63	317	742
West Virginia.....	0	0	0	0	0	0	0	0
Wisconsin.....	0	0	0	0	0	0	0	0
Wyoming.....	0	0	0	0	0	0	0	0
Total.....	1,159	1,005	712	407	812	432	4,154	3,594

State or Territory.	1888	1889	1890	1891	1892	1893	1894	1895
Alabama.....	406	427	371	50	90	60	50	50
Colorado.....	100	50	30	21	220	200	250	0
Georgia.....	0	0	0	0	0	0	0	0
Illinois.....	0	0	0	0	0	0	0	0
Indiana.....	0	0	0	0	0	0	0	0
Indian Territory.....	0	0	0	0	0	0	0	0
Kansas.....	0	0	0	0	0	0	0	0
Kentucky.....	2	100	303	24	100	100	0	0
Missouri.....	0	0	0	0	0	0	0	0
Montana.....	0	50	0	0	0	0	0	0
New Mexico.....	0	0	0	0	0	0	0	0
New York.....	12	0	1	0	0	0	a 13	a 13
Ohio.....	1,565	567	74	11	269	19	118	b 170
Pennsylvania.....	84	40	292	0	0	0	0	0
Tennessee.....	0	0	0	0	0	0	0	0
Texas.....	0	250	250	250	206	206	100	350
Virginia.....	100	0	80	0	30	0	0	0
Washington.....	318	631	334	555	978	132	60	55
West Virginia.....	0	0	0	0	0	0	0	0
Wisconsin.....	0	0	0	0	0	0	0	0
Wyoming.....	0	0	0	0	0	0	0	0
Total.....	2,587	2,115	1,735	911	1,893	717	591	638

<sup>a</sup> Smet-Solvay.

<sup>b</sup> Includes 60 Otto-Hoffmann and 50 Smet-Solvay ovens.

## Production of Coke from 1880 to 1895.

The production of coke in the several States and Territories from 1880 to 1895 is shown in the following table:

TABLE NO. 51.

*Amount of coke produced, in short tons, in the United States from 1880 to 1895, inclusive, by States and Territories.*

State or Territory.	1880	1881	1882	1883	1884	1885
Alabama	60,781	109,033	152,940	217,531	244,009	301,180
Colorado	25,563	48,587	102,105	133,997	115,719	131,960
Georgia	38,041	41,376	46,602	67,012	79,268	70,689
Illinois	12,700	14,800	11,400	13,400	13,095	10,350
Indiana	0	0	0	0	0	0
Indian Territory	1,546	1,764	2,025	2,573	1,912	3,584
Kansas	3,070	5,870	6,080	8,430	7,190	8,050
Kentucky	4,250	4,370	4,070	5,025	2,223	2,704
Missouri	0	0	0	0	0	0
Montana	0	0	0	0	75	175
New Mexico	0	0	1,000	3,905	18,282	17,940
New York						
Ohio	100,596	119,469	103,723	87,834	62,709	39,416
Pennsylvania	2,821,384	3,437,708	3,945,034	4,438,464	3,822,128	3,991,905
Tennessee	130,609	143,853	137,695	203,691	219,723	218,842
Utah	1,000	0	250	0	0	0
Virginia	0	0	0	25,240	63,600	49,139
Washington	0	0	0	0	400	311
West Virginia	138,755	187,126	230,393	257,519	223,472	260,571
Wisconsin	0	0	0	0	0	0
Wyoming	0	0	0	0	0	0
Total	3,338,300	4,118,760	4,793,321	5,464,721	4,873,805	5,106,696

State or Territory.	1886	1887	1888	1889	1890
Alabama	375,054	325,020	508,511	1,030,510	1,072,942
Colorado	142,797	170,698	170,642	137,638	245,756
Georgia	82,680	79,241	83,721	91,727	102,233
Illinois	8,103	9,198	7,410	11,583	5,000
Indiana	6,124	17,658	11,956	8,301	6,013
Indian Territory	6,351	10,080	7,502	6,639	6,639
Kansas	12,493	14,950	14,831	13,910	12,311
Kentucky	4,528	14,565	23,150	13,021	12,343
Missouri	0	2,970	2,600	5,275	6,186
Montana	0	7,200	12,000	14,043	14,427
New Mexico	10,236	13,710	8,540	3,460	2,050
New York		0	0	0	0
Ohio	31,932	93,004	67,194	75,124	74,633
Pennsylvania	5,406,597	5,832,849	6,545,779	7,659,065	8,560,245
Tennessee	368,139	396,979	385,693	359,710	318,728
Utah	0	0	0	761	8,528
Virginia	122,352	166,947	149,199	146,528	165,847
Washington	25	14,625	0	3,841	5,837
West Virginia	261,158	442,031	531,762	607,880	833,377
Wisconsin	0	0	500	16,014	24,976
Wyoming	0	0	0	0	0
Total	6,845,899	7,611,705	8,540,030	10,072,942	11,509,021





An inspection of the above table indicates that one change in the relative rank of the coke producing States was between Alabama and West Virginia, these two States exchanging places, Alabama becoming second, whereas it was third in 1894, and West Virginia becoming third, where it was second in 1894. Colorado and Tennessee also exchanged places, Tennessee becoming fourth and Colorado fifth of the States.

### Value and Average Selling Price of Coke.

In the following table is given the total value of coke produced in the United States in each year from 1880 to 1895, inclusive:

TABLE NO. 54.

*Total value at the ovens of the coke made in the United States in the years from 1880 to 1895 inclusive, by States and Territories.*

State or Territory.	1880	1881	1882	1883	1884	1885
Alabama	\$ 183,063	\$ 326,819	\$ 425,940	\$ 508,473	\$ 609,185	\$ 755,645
Colorado	145,226	267,156	476,665	584,578	409,930	512,162
Georgia	81,778	88,753	100,194	147,166	169,192	144,198
Illinois	41,950	45,850	29,050	28,200	25,639	27,798
Indiana	0	0	0	0	0	0
Indian Territory	4,638	5,304	6,075	7,719	5,736	12,902
Kansas	6,000	10,200	11,460	16,560	14,580	18,255
Kentucky	12,250	12,630	11,530	14,425	8,760	8,499
Missouri	0	0	0	0	0	0
Montana	0	0	0	0	900	2,063
New Mexico	0	0	6,000	21,478	91,410	89,700
New York	235,905	297,728	266,113	225,690	156,294	109,723
Ohio	5,258,040	5,898,579	6,133,668	5,410,387	4,783,230	4,981,656
Pennsylvania	316,607	342,535	472,505	459,126	428,870	398,459
Tennessee	10,000	0	2,500	0	0	0
Utah	0	0	0	44,345	111,300	85,993
Virginia	0	0	0	0	1,900	1,477
Washington	0	0	0	0	0	0
West Virginia	318,797	429,571	520,437	563,490	425,952	485,588
Wisconsin	0	0	0	0	0	0
Wyoming	0	0	0	0	0	0
Total	6,631,265	7,725,175	8,462,167	8,121,607	7,242,878	7,629,118

State or Territory.	1886	1887	1888	1889	1890
Alabama	\$ 993,302	\$ 775,090	\$ 1,189,679	\$ 2,372,417	\$ 2,589,447
Colorado	569,120	682,778	716,305	643,479	959,246
Georgia	179,031	174,410	177,907	149,069	150,995
Illinois	21,487	19,591	21,038	29,764	11,250
Indiana	17,953	51,141	31,993	25,922	19,706
Indian Territory	22,229	33,435	21,755	17,957	21,577

TABLE NO. 55.

Total value at the ovens of the coke made in the United States in the years from 1890 to 1895 inclusive, by States and Territories—Continued.

State or Territory.	1886	1887	1888	1889	1890
Kansas.....	\$ 19,204	\$ 28,575	\$ 29,073	\$ 28,593	\$ 29,116
Kentucky.....	10,082	31,730	47,244	29,769	22,191
Missouri.....	0	10,395	9,100	5,800	9,240
Montana.....	0	72,000	96,000	122,023	125,655
New Mexico.....	51,180	82,280	51,240	18,408	10,025
New York.....		245,981			
Ohio.....	94,012		168,330	188,222	218,090
Pennsylvania.....	7,661,055	10,746,352	8,230,759	10,743,492	16,333,674
Tennessee.....	637,861	870,900	490,491	731,416	684,116
Utah.....	0	0	0	3,042	37,196
Virginia.....	305,880	417,348	260,000	325,861	278,724
Washington.....	4,125	102,375	0	30,728	46,696
West Virginia.....	513,843	976,732	905,548	1,074,177	1,524,746
Wisconsin.....	0	0	1,500	92,092	143,622
Wyoming.....	0	0	0	0	0
Total.....	\$ 11,153,366	\$ 15,321,116	\$ 12,445,983	\$ 16,670,301	\$ 23,215,302

State or Territory.	1891	1892	1893	1894	1895
Alabama.....	\$ 2,986,242	\$ 3,464,633	\$ 2,648,632	\$ 1,871,348	\$ 3,033,521
Colorado.....	896,984	a 1,234,320	a 1,137,488	a 903,970	a 941,987
Georgia.....	231,877	163,614	136,089	116,266	70,580
Illinois.....	11,770	7,133	4,400	4,400	4,500
Indiana.....	7,596	6,472	9,088	13,102	9,333
Indian Territory.....	30,483	12,402	25,072	10,693	17,657
Kansas.....	33,296	19,906	18,640	15,680	11,289
Kentucky.....	68,281	72,563	97,350	51,566	37,249
Missouri.....	10,000	10,949	9,735	3,563	2,442
Montana.....	258,925	311,013	239,580	165,187	189,866
New Mexico.....	10,523	0	18,476	23,213	29,491
New York.....			35,925		
Ohio.....	76,901	112,907	43,671	90,875	69,655
Pennsylvania.....	12,679,826	15,015,336	9,468,036	6,585,489	11,974,162
Tennessee.....	701,803	724,106	491,523	480,124	754,925
Utah.....	35,778				
Virginia.....	265,107	322,486	282,898	295,747	322,564
Washington.....	42,000	50,446	34,247	18,249	64,632
West Virginia.....	1,815,043	1,821,965	1,716,907	1,639,677	1,724,239
Wisconsin.....	192,804	185,900	95,851	19,465	26,103
Wyoming.....	8,046	0	10,206	15,232	17,133
Total.....	\$ 20,393,216	\$ 23,536,141	\$ 16,523,714	\$ 12,328,856	\$ 19,234,319

a Including Utah's value.

While this table gives the totals of the values as returned in the schedules, the figures do not always represent the same thing. A statement as to the actual selling price of the coke was asked for, and in most cases, including possibly 80 per cent of all the coke produced, the figures are the actual selling price. In some cases, however, the value is an estimate. Considerable of the coke made in the United States is produced by proprietors of blast furnaces for consumption in their own furnaces, none being sold. The value, therefore, given for this coke would be an estimate, based in some instances, where there are coke works in the neighborhood selling coke for the general market, upon the price obtained for this coke; in other cases the cost is estimated at the cost of the coke at the furnace, plus a small percentage for profit on the coking op-

eration, while in still other cases the value given is only the actual cost of the coke at the ovens.

In the following table is given the average value per short ton of the coke made in the United States for each year from 1880 to 1895, inclusive, by States and Territories.

TABLE NO. 56.

*Average value per short ton at the ovens of the coke made in the United States in the years from 1880 to 1895, inclusive, by States and Territories.*

State or Territory.	1880.	1881	1882.	1883	1884.	1885.	1886	1887.	1888	1889	1890	1891	1892	1893	1894	1895
Alabama.....	3.01	3.00	2.79	2.75	2.50	2.50	2.65	2.39	2.34	2.30	2.41	2.33	2.31	2.27	2.025	2.10
Colorado.....	5.68	5.29	4.67	4.36	3.45	3.88	3.99	4.00	4.00	3.43	3.90	3.24	3.31	2.13	2.85	2.76
Georgia.....	2.15	2.15	2.15	2.20	2.13	2.04	2.17	2.20	2.12	1.57	1.48	2.25	2.00	1.50	1.25	1.17
Illinois.....	3.30	3.10	2.55	2.10	1.96	2.68	2.65	2.13	2.84	2.57	2.25	2.25	2.25	2.00	2.00	2.00
Indiana.....	.....	.....	.....	.....	.....	2.93	2.81	2.68	3.12	3.28	2.00	2.02	1.58	2.00	1.94	.....
Indian Ter....	3.00	3.00	3.00	3.00	3.00	3.60	3.50	3.33	2.90	2.70	3.23	2.22	3.47	3.51	3.50	3.41
Kansas.....	1.95	1.80	1.70	1.96	2.02	1.65	1.54	1.91	1.66	1.91	2.37	2.35	2.18	2.18	1.855	2.14
Kentucky.....	2.88	2.89	2.83	2.87	3.94	3.14	2.23	2.18	2.04	2.28	1.80	2.02	2.01	2.00	1.73	1.46
Missouri.....	.....	.....	.....	.....	.....	.....	.....	3.50	3.50	1.10	1.51	1.46	1.50	1.65	1.58	1.20
Montana.....	.....	.....	.....	12.00	11.72	.....	.....	10.10	8.00	8.63	8.71	8.91	9.00	8.00	9.50	7.49
New Mexico....	.....	.....	6.00	5.50	5.00	5.00	5.00	6.00	6.00	5.32	4.89	4.75	0	3.18	4.32	2.01
New York.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.8	.....	.....
Ohio.....	2.54	2.49	2.57	2.57	2.49	2.78	2.69	2.61	2.48	2.50	2.92	1.99	2.18	1.95	2.78	2.40
Pennsylvania..	1.86	1.70	1.5	1.22	1.25	1.25	1.42	1.84	1.26	1.40	1.91	1.82	1.80	1.52	1.086	1.266
Tennessee.....	2.42	2.33	2.5	2.25	1.96	1.31	1.87	2.19	1.27	2.03	1.96	1.93	2.05	1.85	1.64	1.90
Utah.....	10.00	.....	10.00	.....	.....	.....	.....	.....	4.00	4.36	4.50	0	.....	.....	.....	.....
Virginia.....	.....	.....	.....	1.75	1.75	2.50	2.50	2.50	1.74	2.22	1.68	1.58	2.18	2.26	1.64	1.33
Washington....	.....	.....	.....	4.75	4.75	5.00	7.00	0.80	8.00	8.00	7.00	7.8	5.08	3.48	4.27	.....
West Virginia	2.30	2.30	2.26	2.19	1.19	1.86	1.94	2.23	1.70	1.76	1.83	1.83	1.76	1.62	1.373	1.34
Wisconsin.....	.....	.....	.....	.....	.....	.....	.....	3.00	5.75	5.75	5.61	5.50	6.41	4.58	5.25	.....
Wyoming.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	0	3.50	63.50	3.50	.....
Average.....	1.99	1.88	1.77	1.49	1.49	1.49	1.63	2.01	1.46	1.62	2.02	1.97	1.96	1.74	1.34	1.44

a Including Utah's value. b Value estimated.

From this table it appears that the average value per ton of coke in the United States in 1895 was 10 cents a ton in excess of the value for 1894. The average values of coke per ton in 1894 and 1895 were lower than any other year since the beginning of the compilation of these statistics. In 1895 the average value per ton varied from \$1.266 in Pennsylvania to \$7.49 in Montana. In considering the above prices the statement previously made as to the meaning of these values must be borne in mind.

#### COAL CONSUMED IN THE MANUFACTURE OF COKE.

In the following table is given the total number of tons of coal used in the manufacture of coke in the United States for the years 1880 to 1895:

TABLE NO. 57.

*Amount of Coal used in the manufacture of Coke in the United States from 1880 to 1895, inclusive, by States and Territories.*

[Short tons.]

State or Territory.	1880	1881	1882	1883	1884	1885
Alabama .....	106,283	184,881	261,839	359,699	418,184	507,934
Colorado .....	51,891	97,508	180,549	224,089	181,969	208,069
Georgia .....	63,402	64,960	77,670	111,687	132,118	117,781
Illinois .....	31,240	35,240	25,270	31,370	30,168	21,487
Indiana .....						
Indian Territory .....	2,494	2,852	3,266	4,150	3,084	5,781
Kansas .....	4,800	8,800	9,200	13,400	11,500	15,000
Kentucky .....	7,206	7,406	6,006	8,437	3,451	5,075
Missouri .....						
Montana .....					165	300
New Mexico .....			1,500	6,941	29,990	31,889
New York .....						
Ohio .....	172,453	201,145	181,577	152,502	108,164	68,796
Pennsylvania .....	4,347,558	5,393,503	6,149,179	6,823,275	6,204,604	6,178,500
Tennessee .....	217,656	241,644	313,537	330,961	348,295	412,538
Utah .....	2,000		500			
Virginia .....				39,000	99,000	81,899
Washington .....					700	544
West Virginia .....	230,758	304,823	366,653	411,159	385,588	415,533
Wisconsin .....						
Wyoming .....						
Total .....	5,237,741	6,546,762	7,577,646	8,516,670	7,951,974	8,071,126

TABLE NO. 58.

*Amount of coal used in the manufacture of coke in the United States from 1880 to 1895, inclusive, by States and Territories.—Continued.*

Short tons.

State or Territory.	1886	1887	1888	1889	1890
Alabama.....	635,120	550,047	848,608	1,746,277	1,809,984
Colorado.....	228,080	267,487	274,212	294,731	407,123
Georgia.....	126,133	158,482	140,000	157,874	170,388
Illinois.....	17,806	16,596	13,020	19,250	9,100
Indiana.....	13,030	35,600	26,547	14,428	11,753
Indian Territory.....	10,242	20,121	13,126	13,277	13,278
Kansas.....	23,062	27,604	24,934	21,600	21,809
Kentucky.....	9,035	29,129	42,642	25,192	24,372
Missouri.....		5,400	5,000	8,455	9,491
Montana.....		10,800	20,040	31,576	32,148
New Mexico.....	18,194	22,549	14,628	7,162	3,980
New York.....					
Ohio.....	59,332	164,974	121,202	132,878	128,921
Pennsylvania.....	8,290,849	8,938,438	9,673,097	11,581,292	13,046,143
Tennessee.....	621,669	655,857	630,099	626,016	600,387
Texas.....					
Utah.....				2,217	24,158
Virginia.....	200,018	235,841	230,529	238,713	251,643
Washington.....	1,400	22,500		6,983	9,120
West Virginia.....	425,002	698,327	863,707	1,001,372	1,395,266
Wisconsin.....			1,000	25,616	38,423
Wyoming.....					
Total.....	10,688,972	11,859,752	12,945,350	15,980,973	18,005,209

State or Territory.	1891	1892	1893	1894	1895
Alabama.....	2,144,277	2,585,966	2,015,398	1,574,245	2,459,465
Colorado.....	462,749	a 599,200	a 628,935	a 542,429	a 580,584
Georgia.....	154,877	158,978	171,645	166,523	118,900
Illinois.....	10,000	4,800	3,300	3,500	3,600
Indiana.....	8,688	6,456	11,549	13,419	9,898
Indian Territory.....	20,551	7,118	15,118	7,278	11,825
Kansas.....	27,181	15,437	13,615	13,288	8,424
Kentucky.....	64,390	70,783	97,212	66,418	63,419
Missouri.....	10,377	11,088	8,875	3,442	3,120
Montana.....	61,667	61,412	61,770	33,313	55,770
New Mexico.....	4,000	0	14,698	13,042	22,345
New York.....			15,150		22,207
Ohio.....	69,370	95,236	42,923	55,324	51,921
Pennsylvania.....	10,588,544	12,591,345	9,386,702	9,059,118	14,211,567
Tennessee.....	623,177	600,126	449,511	516,802	684,655
Texas.....					530
Utah.....	25,281				
Virginia.....	285,113	226,517	194,059	280,524	410,737
Washington.....	10,000	12,372	11,374	8,563	22,973
West Virginia.....	1,716,976	1,709,193	1,745,757	1,976,128	2,087,816
Wisconsin.....	52,944	54,300	24,085	6,343	8,287
Wyoming.....	4,470	0	5,400	8,685	10,240
Total.....	16,341,540	18,813,337	14,917,146	14,348,750	20,848,333

a Including Utah's consumption.

In regard to this table, it is to be noted that in many cases the statement as to the amount of coal used in the production of coke is an estimate. At but few works is the coal weighed before being charged into the ovens. A great deal of the coke made in the United States is from run of mine—that is, all of the product of mining, lump, nut, and slack, as it comes to the mouth of the pit in the mine car is charged into the ovens—and if no coal is sold as coal it is comparatively easy to ascertain from the amounts paid for min-

ing what is the amount of coal charged into the ovens. But even in such cases considerable difficulty arises from the fact that mining is paid for by the measured bushel or ton of so many cubic feet, while our statistics are by weight, and the measured bushel or ton is often not the equivalent of the weighed bushel or ton. It is also true that in certain districts where the men are paid by the car the car contains even of measured tons more than the men are paid for. Under such circumstances it is not to the interest of the operator to weigh the coal as it is charged into the oven.

Further, in many districts coke making is simply for the purpose of utilizing the slack coal produced in mining or that which falls through the screen at the tippie when lump is sold. In such cases the slack is rarely, if ever, weighed as it is charged into the ovens, so that any statement as to the amount of coal used at such works will be an estimate. At some works the coal is often weighed for a brief period, and, the coke being weighed as it is sold, a percentage of yield is ascertained which is used in statements as to the amount of coal used and the yield of this coal in coke.

Great care has been exercised, in view of these facts, to reach a satisfactory estimate as to the amount of coal used in the production of coke, as given in the table immediately preceding, and the percentage yield of coal in coke as shown in the table next subsequent. Analyses of coals from most of the districts in the United States have been secured. These analyses, checked by personal knowledge as to the wastefulness of the methods of coking in each district, have enabled the writer to reach a conclusion as to whether the returns made were approximately correct or not. Where it has been judged that they were incorrect, correspondence has usually led to revision. It is sometimes the custom of coke manufacturers who do not weigh the coal charged into the ovens to estimate that the yield of coke is equal to the percentage of the fixed carbon and ash in the coal. A report from a certain coke works showed a yield of 77 per cent. This was equal to the average amount of fixed carbon and ash in the coal. Further inquiry developed the fact that at other mines in this district, using the same character of coal, the yield as reported varied from 50 to 66 per cent. Upon the attention of the party making the return showing 77 per cent. being called to these facts the yield was reduced to 63 per cent. As coke is sold by weight it has always been assumed that the report of production of coke was accurate, and where the coal was not weighed, the yield of coal in coke being ascertained, a calculation could be made which would show approximately the amount of coal used.

But even under these conditions it is believed that more coal was actually used in the production of coke in each of the years covered by the above table than is shown.

The amount of coal necessary to produce a ton of coke, assuming that the above tables are approximately correct, was as follows:

TABLE NO. 59.

*Coal required to produce a ton of coke in tons or pounds.*

Year.	Tons.	Pounds.	Year.	Tons.	Pounds.
1880.....	1.57	3,140	1888.....	1.51	3,020
1881.....	1.59	3,180	1889.....	1.55	3,100
1882.....	1.58	3,160	1890.....	1.56	3,120
1883.....	1.56	3,120	1891.....	1.58	3,160
1884.....	1.63	3,260	1892.....	1.57	3,140
1885.....	1.58	3,160	1893.....	1.57	3,140
1886.....	1.56	3,120	1894.....	1.56	3,120
1887.....	1.56	3,120	1895.....	1.56	3,120

In the following table is shown the percentage yield of coal in the manufacture of coke for the years 1880 to 1895. By the "yield" is of course meant the percentage of the constituents of the coal that remain as coke after the process of coking.

While these tables show an average of something like 64 per cent for most of the years, it is believed that even this is a little too high. Probably the actual yield of coal in coke throughout the United States, if the actual weight of coal charged into the the ovens and the actual weight of the coke drawn had been taken, would not have exceeded 60 or 61 per cent.

TABLE NO. 60.

*Percentage yield of coal in the manufacture of coke in the United States in the years 1880 to 1895, inclusive, by States and Territories.*

State or Territory.	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895
Alabama.....	57.59	58	60	60	59	59	59	60	59	59	60	58	58	58.7	58.7	58.7
Colorado.....	49.50	57	61	61	63	62.6	64	65.6	63	60	61	63.9	a 57.7	a 58.5	a 58.6	58.6
Georgia.....	60.67	60	60	61	60	60	59	60	60	60	62.5	51.5	52.8	55.9	50.6	50.6
Illinois.....	41.42	45	43	43	48	46	55.5	56.9	60	53	52	66	66.7	57.9	62.5	62.5
Indiana.....	0	0	0	0	0	47	50	45	51	51	44	49.7	49.6	48.6	48.5	48.5
Indian Territory..	62.62	62	62	62	62	62	62	50	57	50	50	46	50	47	42	43.8
Kansas.....	64.64	65	62.9	62.3	53	75.4	54	59	61	56	52	59	52	63.5	62.8	62.8
Kentucky.....	60.60	59	60	61	53	50	50	54	52	51	52	51	50	44.8	40.1	40.1
Missouri.....	0	0	0	0	0	0	55	52	42	65	66	65.8	66.5	65.4	65	65
Montana.....	0	0	0	46	58	5	65	7.00	46	45	47	53.6	48.5	52.2	45.4	45.4
New Mexico.....	0	0	66.7	57.3	57.5	56.3	56	61	58	48	51.5	57.5	0	39.5	50	65.5
New York.....														84.8		83.4
Ohio.....	58.59	57	58	58	57	59	56	54	56	59	56	54.4	52	59	54	54
Pennsylvania.....	65.64	64	65	62	64	63.2	65.3	68	66	65	66	66.1	66	66.9	66.2	66.2
Tennessee.....	6	60	60	62	63	53	59	61	61	57	58	58	59	59	56.6	57.9
Texas.....	0	0	0	0	0	0	50	0	0	0	0	0	0	0	0	54
Utah.....	50	0	50	0	0	0	0	0	0	34	35	31				
Virginia.....	0	0	0	64.5	64.3	61.1	70.8	61.7	61	66	58	65.3	61.5	64.2	59.6	59.6
Washington.....	0	0	0	57.5	57	58.9	65	0	55	64	60	58	59	61.2	61.2	61.2
West Virginia.....	60.61	63	63	62	63	62	63.3	61.6	61	59	58	60.5	60.8	61.4	61.6	61.6
Wisconsin.....	0	0	0	0	0	0	0	0	50	62.5	65	62	62	67	60	60
Wyoming.....	0	0	0	0	0	0	0	0	0	0	60	0	54	50	47.8	47.8
Total average.....	63	63	63	64	61	63	61.64	2	66	64	64	63	61	63.5	61	61



In the following table will be found a statement of the amount and value of coal used in the manufacture of coke in the United States in the years 1895, 1894, and 1893. The chief point in these tables is to show the average value per ton of coal used and the amount and value of coal necessary to make a ton of coke. The average value of coal per ton in 1893 was 70 cents; in 1894, 65.8 cents, and in 1895, 66 cents. The amount of coal necessary to make a ton of coke in 1893 was 1.57 tons; in 1894 and 1895, 1.56 tons. The value of coal necessary to make a ton of coke in 1893 was \$1.10; in 1894 and 1895, \$1.03.

Some interesting comparisons can be deduced from this table and the one published elsewhere as to the average value at the oven of the coke made in the United States. For example, the average price per ton of all coke produced in the United States in 1895 was \$1.44; it will be noted, therefore, that the amount received for the coke per ton above the value of the coal was 41 cents. Making a comparison by States it will be seen that the average price received for a ton of coke in Pennsylvania in 1895 was \$1.266, while the average value of the coal was 93 cents a ton, leaving 33.6 cents as the price received for the coke in excess of the value of the coal that went into a ton. In Alabama the selling price of coke was \$2.10, while the value of coal was \$1.49. In Colorado the relative figures were \$2.76 per ton for coke and value of coal \$1.66; in Tennessee, \$1.90 for coke and \$1.31 for coal; in Virginia, \$1.32 for coke and \$1.11 for coal; in West Virginia, \$1.34 for coke and 87 cents for coal.

TABLE NO. 61.

*Amount and value of coal used in the manufacture of coke in the United States in 1895, and amount and value of same per ton of coke.*

State or Territory.	Coal used.	Total value of coal.	Value of coal per ton.	Amount of coal per ton of coke.	Value of coal to a ton of coke.
	<i>Short tons.</i>			<i>Short tons.</i>	
Alabama .....	2,459,465	\$ 2,153,233	\$0.875	1.70	\$1.49
Colorado (a) .....	580,534	568,067	.978	1.70	1.66
Georgia .....	118,900	77,285	.65	1.97	1.28
Illinois .....	3,600	910	.25	1.60	.40
Indiana .....	9,898	4,749	.48	2.06	.89
Indian Territory .....	11,825	2,956	.25	2.28	.57
Kansas .....	8,424	3,555	.42	1.59	.67
Kentucky .....	63,419	12,841	.20	2.49	.50
Missouri .....	3,120	1,248	.40	1.54	.62
Montana .....	55,770	146,987	2.64	2.20	5.81
New Mexico .....	22,385	12,024	.537	1.53	.82
Ohio .....	51,921	50,593	.97	1.79	1.74
Pennsylvania .....	14,211,567	8,752,418	.616	1.51	.93
Tennessee .....	684,655	518,401	.757	1.73	1.31
Virginia .....	410,737	271,056	.66	1.63	1.11
Washington .....	22,973	43,532	1.89	1.52	2.87
West Virginia .....	2,087,816	1,126,161	.539	1.62	.87
Wisconsin .....	8,287	19,474	2.35	1.67	3.92
Wyoming .....	10,240	7,680	.75	2.09	1.57
<b>Total and averages.....</b>	<b>20,825,586</b>	<b>13,773,140</b>	<b>.66</b>	<b>1.56</b>	<b>1.03</b>

a Figures given for Colorado include the statistics of Utah.

TABLE NO. 62.

*Amount and value of coal used in the manufacture of coke in the United States in 1894,  
and amount and value of same per ton of coke.*

State or Territory.	Coal used.	Total value of coal.	Value of coal per ton.	Amount of coal per ton of coke	Value of coal to a ton of coke.
	Short tons.			Short tons	
Alabama .....	1,574,245	\$ 1,443,043	\$0.917	1.70	\$1.56
Colorado (a) .....	542,429	539,065	.994	1.71	1.70
Georgia .....	166,523	181,882	.73	1.79	1.31
Illinois .....	3,800	950	.25	1.73	.43
Indiana .....	13,489	6,265	.465	2.06	.96
Indian Territory .....	7,274	1,819	.25	2.38	.60
Kansas .....	13,288	6,275	.47	1.67	.74
Kentucky .....	66,418	14,304	.215	2.23	.48
Missouri .....	3,442	1,566	.45	1.53	.69
Montana .....	33,313	99,940	3.00	1.92	5.75
New Mexico .....	13,042	18,259	1.40	2.00	2.80
Ohio .....	55,324	62,649	.95	1.70	1.62
Pennsylvania .....	9,059,118	5,317,695	.59	1.49	.88
Tennessee .....	516,802	877,229	.73	1.77	1.29
Virginia .....	280,524	309,730	1.10	1.66	1.72
Washington .....	8,563	16,391	1.94	1.63	3.12
West Virginia .....	1,976,128	1,102,105	.58	1.66	.93
Wisconsin .....	6,343	17,443	2.75	1.50	4.13
Wyoming .....	8,685	5,211	.60	2.00	1.20
Total and averages .....	14,348,750	9,451,851	.65	1.56	1.93

a Figures given for Colorado include the statistics of Utah.

b Value estimated.

TABLE NO. 63.

*Amount and value of coal used in the manufacture of coke in the United States in 1893,  
and amount and value of same per ton of coke.*

State or Territory.	Coal used	Total value of coal.	Value of coal per ton.	Amount of coal per ton of coke.	Value of coal to a ton of coke.
	Short tons			Short tons.	
Alabama .....	2,015,398	\$ 1,894,666	\$ 0.94	1.725	\$ 1.62
Colorado (a) .....	628,935	599,773	.95	1.73	1.65
Georgia .....	171,645	171,645	1.00	1.89	1.89
Illinois .....	3,300	660	.20	1.50	.30
Indiana .....	11,549	4,043	.35	2.02	.71
Indian Territory .....	15,118	3,779	.25	2.12	.53
Kansas .....	13,645	7,117	.52	1.59	.82
Kentucky .....	97,212	34,804	.36	2.00	.72
Missouri .....	8,875	3,168	.36	1.50	.54
Montana .....	61,770	185,310	3.00	2.06	6.18
New Mexico .....	14,698	21,069	1.43	2.53	3.63
New York .....	15,150	39,550	2.61	1.18	3.08
Ohio .....	42,963	24,700	.58	1.91	1.10
Pennsylvania .....	9,386,702	5,738,798	.61	1.51	.92
Tennessee .....	449,511	303,260	.808	1.69	1.37
Virginia .....	194,059	212,467	1.09	1.55	1.70
Washington .....	11,374	25,163	2.21	1.69	3.74
West Virginia .....	1,745,757	1,014,219	.60	1.64	.90
Wisconsin .....	24,085	672,255	3.00	1.61	4.83
Wyoming .....	5,400	3,240	.60	1.85	1.11
Total and averages .....	14,917,146	10,449,686	.70	1.57	1.10

a Figures given for Colorado include the statistics of Utah.

b Value estimated.

## CONDITION IN WHICH COAL IS CHARGED INTO OVENS.

In the following table will be found a statement of the condition of coal when charged into ovens—that is, whether it is run of mine, slack, washed, or unwashed. The tables for 1895, 1894, and 1893 are given. The headings explain themselves. It is only necessary to state that run of mine, washed, includes that run-of-mine coal which is crushed before being washed.

*Character of coal used in the manufacture of coke in 1895.*

State or Territory.	Run of mine.		Slack.		Total.
	Unwashed.	Washed.	Unwashed.	Washed.	
	<i>Short tons.</i>	<i>Short tons.</i>	<i>Short tons.</i>	<i>Short tons.</i>	<i>Short tons.</i>
Alabama.....	1,208,020	0	32,068	1,219,377	2,459,465
Colorado (a).....	119,868	0	453,597	7,119	580,584
Georgia.....	0	118,900	0	0	118,900
Illinois.....	0	0	0	3,670	3,600
Indiana.....	0	0	0	9,898	9,898
Indian Territory.....	0	0	0	11,825	11,825
Kansas.....	0	0	8,424	0	8,424
Kentucky.....	0	502	624	62,393	63,419
Missouri.....	0	0	3,120	0	3,120
Montana.....	0	0	0	55,770	55,770
New Mexico.....	b 10,000	0	b 12,385	0	22,385
New York.....	0	0	22,207	0	22,207
Ohio.....	28,053	0	10,868	13,000	51,921
Pennsylvania.....	13,618,376	34,728	440,869	117,594	14,211,567
Tennessee.....	96,744	59,234	235,906	241,721	684,655
Texas.....	0	0	0	530	530
Virginia.....	114,802	0	295,935	0	410,737
Washington.....	0	0	0	22,973	22,973
West Virginia.....	405,725	24,034	1,476,003	182,084	2,087,816
Wisconsin.....	8,287	0	0	0	8,287
Wyoming.....	0	0	10,240	0	10,240
Total.....	15,609,875	237,468	3,052,246	1,948,734	20,848,323

a Including Utah's consumption.

b Quantity estimated.

From the above table it appears that of the 20,848,323 tons of coal coked in the United States 15,847,343 tons were run of mine and 5,000,980 tons slack. Of the run-of-mine coal used only 237,468 tons were washed, and of the 5,000,980 tons of slack used 1,948,734 tons were washed; so that of the total of 20,848,323 tons of coal made into coke in the United States in 1895 but 2,186,202 tons, or 10½ per cent., were washed.

For comparison the table on the following page is inserted, showing the character of coal used in the manufacture of coke in the United States in 1893 and 1894.

TABLE NO. 65.

Character of coal used in the manufacture of coke in 1894 and 1893.

State or Territory.	1894						1893					
	Run of mine.			Slack.			Run of mine.			Slack.		
	Unwashed.	Washed.		Unwashed.	Washed.		Unwashed.	Washed.		Unwashed.	Washed.	
		Short tons.	Short tons.		Short tons.	Short tons.		Short tons.	Short tons.		Short tons.	Short tons.
Alabama.....	41,097	7,429		477,832	677,893		1,574,245	51,163	293,198	495,734	2,015,398	
Colorado (a).....	126,642			415,767			542,419	0	519,024	0	1,298,235	0
Georgia.....	0	1,6323		0	6		168,523	0	0	171,615	0	17,615
Illinois.....	0	0		0	3,820		3,901	0	0	3,310	3,400	0
Indiana.....	0	0		8,689	7,800		13,489	0	930	10,619	11,549	0
Indian Territory.....	0	0		0	7,274		7,274	0	0	15,118	15,118	0
Kansas.....	0	0		11,988	0		13,288	0	0	12,445	13,645	0
Kentucky.....	0	2,980		7,400	55,538		69,418	835	11,973	2,759	97,212	0
Kentucky.....	0	0		3,412	0		3,412	0	0	8,875	0	0
Montana.....	0	33,313		0	0		33,313	0	44,000	0	61,770	0
New Mexico.....	0	0		13,012	0		13,012	0	0	0	17,770	0
New York.....	0	0		14,445	40,479		55,324	0	15,130	0	14,648	0
Ohio.....	0	0		201,111	61,19		9,094,11	0	21,859	18,101	15,150	0
Pennsylvania.....	8,671,534	119,379		148,564	138,013		9,392,307	216,752	7,691,294	128,503	9,386,792	0
Tennessee.....	166,993	61,841		176,660	0		179,126	0	137,483	132,402	419,511	0
Virginia.....	103,274	0		0	280,541		107,198	0	86,561	0	194,039	0
Washington.....	0	0		8,563	8,563		0	10,974	0	405	11,374	0
West Virginia.....	165,370	14,601		1,607,735	19,222		321,952	15,249	1,176,676	2,259,299	1,745,757	0
Wisconsin.....	633	0		0	6,343		20,474	0	3,611	0	24,065	0
Wyoming.....	0	0		8,685	0		8,685	0	5,400	0	5,400	0
Total.....	9,618,750	405,296		3,122,652	1,192,082		11,319,750	370,112	10,308,682	3,019,075	14,917,146	0

a Including Utah's consumption.

From a comparison of the three tables given above it appears that in 1893, 71.4 per cent of the coal used was run of mine; in 1894, 70 per cent, and in 1895, 76 per cent. In 1893, 28.6 per cent of the coal used was slack; in 1894, 30 per cent, and in 1895, 24 per cent. In 1893, 10.5 per cent of the total was washed; in 1894, 11 per cent, and in 1895, 10.5 per cent.

In the following table the statistics regarding the character of the coal for the years 1890 to 1895, inclusive, are consolidated :

TABLE NO. 66.

*Character of coal used in the manufacture of coke in the United States since 1890.*

Year.	Run of mine.		Slack.		Total.
	Unwashed.	Washed.	Unwashed.	Washed.	
	Short tons.	Short tons.	Short tons.	Short tons.	Short tons.
1890 .....	14,060,907	328,563	2,674,492	931,247	18,005,209
1891 .....	12,255,415	290,807	2,945,359	852,959	16,344,540
1892 .....	14,458,636	324,050	3,256,493	779,156	18,813,337
1893 .....	10,306,082	350,112	3,049,075	1,211,877	14,917,146
1894 .....	9,648,750	405,266	3,102,652	1,192,082	14,348,750
1895 .....	15,009,876	237,468	3,052,246	1,948,731	20,848,323

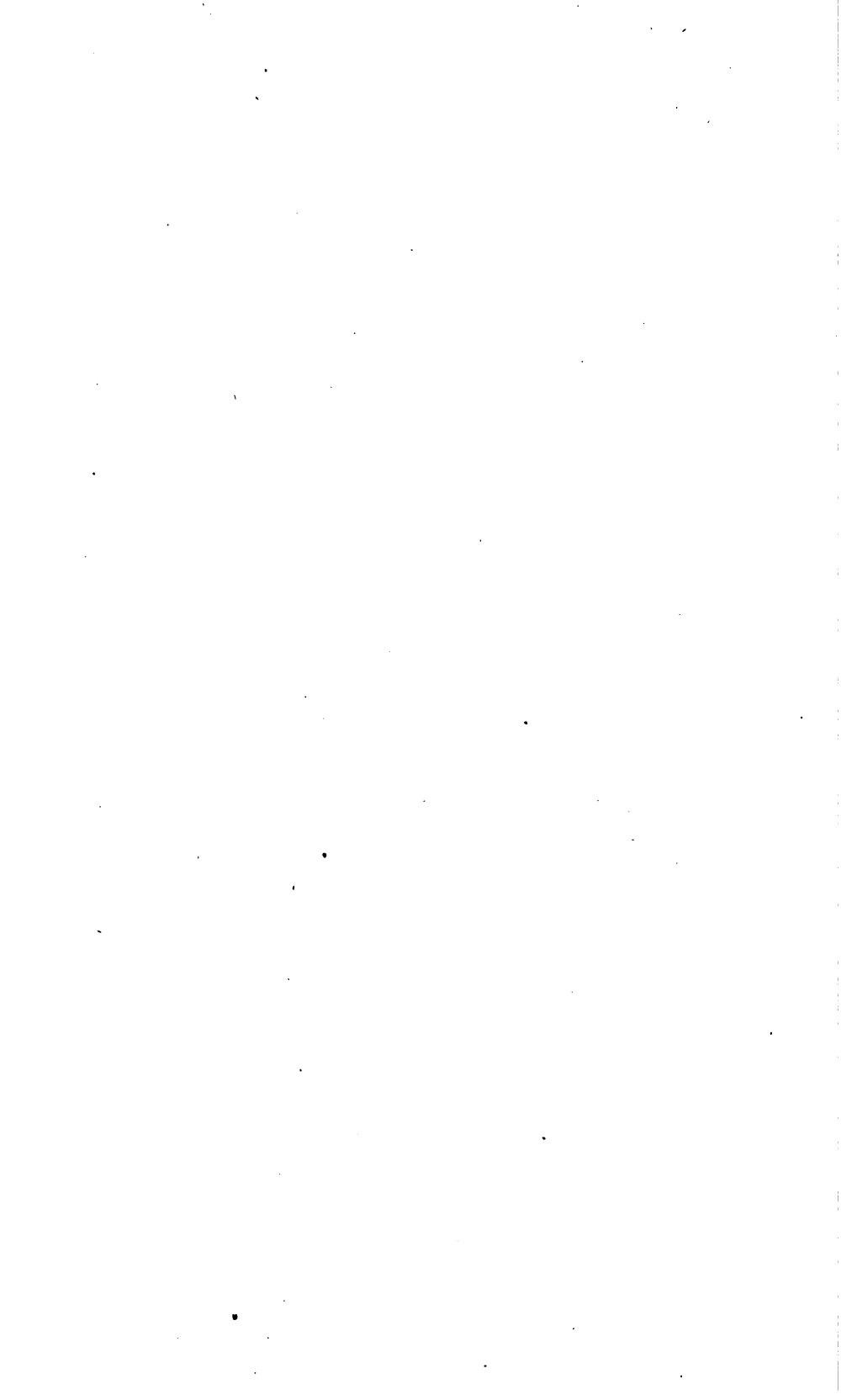
## IMPORTS.

The following table gives the quantities and value of coke imported and entered for consumption in the United States from 1869 to 1895, inclusive. In the reports of the Treasury Department the quantities given are long tons. These have been reduced to short tons to make the table consistent with the other tables in this report:

TABLE NO. 67.

*Coke imported and entered for consumption in the United States, 1869 to 1895, inclusive.*

Year ending—	Quantity.	Value.	Year ending—	Quantity.	Value.
	Short tons.			Short tons.	
June 30, 1869 .....		\$2,053	June 30, 1883 .....	20,634	\$113,114
1870 .....		6,384	1884 .....	14,483	36,278
1871 .....		19,524	1885 .....	20,876	64,814
1872 .....	9,575	9,217	Dec. 31, 1886 .....	28,124	84,801
1873 .....	1,091	1,366	1887 .....	35,320	100,312
1874 .....	634	4,548	1888 .....	35,201	107,914
1875 .....	1,016	9,648	1889 .....	28,608	88,008
1876 .....	2,095	8,657	1890 .....	20,808	101,767
1877 .....	4,064	16,686	1891 .....	50,753	223,184
1878 .....	6,606	24,186	1892 .....	27,420	86,350
1879 .....	6,035	24,718	1893 .....	37,183	99,683
1880 .....	5,047	18,408	1894 .....	32,566	70,359
1881 .....	15,210	61,987	1895 .....	29,622	71,366
1882 .....	14,924	53,244			



# OIL STATISTICS.

## WEST VIRGINIA OIL FIELD

The oil fields of West Virginia are extensions of the New York-Pennsylvania field, and the conditions under which the oil is found, not only in West Virginia, but in eastern Ohio, are similar to those under which it occurs in southwestern Pennsylvania. It is also true, as a rule, that the character of the petroleum is identical with that from Pennsylvania, except a portion of that from the Volcano and Petroleum districts, where a lubricating oil of high grade is produced. As nearly as can be ascertained the production of West Virginia in 1895, was 8,120,125 barrels, of which 8,109,782 barrels are classed as illuminating and 10,343 barrels as lubricating oil. The total value of this product was \$11,038 770, an average of \$1.36 a barrel. The average per barrel of the illuminating oil is given as \$1.35 6-7 and the lubricating as \$2.04.

### Developments.

The developments in West Virginia during the year have been watched with interest, not only on account of the activity displayed, but because of the possibilities of this region. The Big Injun sand is known to underlie the entire northwestern portion of the State, and it has already been determined that the Fifth sand covers large areas. Both of these strata have proved very productive in places, and the Keener sand (a stray sand above the Big Injun) has furnished at least one pool and augmented the output of many Big Injun sand wells in other places. The Cow Run sand, in the Bull Run district, and the Salt sand, in the Cairo region, are also small factors in the situation.

*Marshall County.*—Early in the year a well was completed in the extreme southwest corner of this county that gave evidence of a fair oil well in the Big Injun sand, resulting in the investment of considerable capital in leases and the starting of additional wells in the vicinity. Later operations proved the first well to be small. The second crop of wells was not so good as the first, and the territory has been abandoned for the present. Several dry holes have been completed in other parts of the county. A few courageous operators still have faith in the eastern part of the county to carry their leases, and several wells are under way with a view to develop gas rather than oil.

*Tyler County.*—There has not been much extension of the Sistersville field during the year, although there has been considerable drilling done within the well defined limits of the field, and the staying qualities of the old wells have met the expectations of the most sanguine operators in the field. The Dye-Brooks wells, on Middle Island Creek, caused intense excitement in the early summer; a score of wells were started, and in ninety days some dozen or more dry holes had defined the pool. The Keener



sand development to the northeast of the Dye-Brooks pool seems to be fully defined, and although quite limited in area has been fairly productive. The completion of a small oil well on Sancho Creek in the early spring started the drill in that region, and several light wells were drilled, but, although the results were discouraging and no new work is under way, owners of territory have not entirely lost faith in the field. In December the Victor Oil Company completed a well on the Kyle farm, near the Big Moses gas well on Indian Creek, that flowed at the rate of 40 to 60 barrels per hour. The same company completed a gas well on the Percy Furbee farm, in the same section a mile west of the Big Moses well, that soon began spraying oil, and is now making 30 to 40 barrels per day.

*Pleasants County.*—An extension to the Eureka field by the completion in October of a well on the Hammett farm has created considerable activity in that section. The result up to the close of the year, has been very discouraging, yet considerable work is now being undertaken.

*Marion County.*—A new Fifth sand pool of importance has been opened to the northwest of the Mannington district. The cost and the length of time required to complete a well in this district make developments slow, but the results so far have been satisfactory to operators, and there seems to be large areas of Fifth sand territory in the Mannington district yet undrilled.

*Wood County.*—A new Cow Run sand development near Waverly is attracting some attention. Though as yet confined to a small area, it has reached a production of about 1,000 barrels per day, with a smaller percentage of dry holes than is usual in that stratum.

*Doddridge and Wetzel Counties.*—Many test wells have been drilled in these counties during the year. Big Injun sand has been opened on Beech Run, Wetzel county, which is extending over the county line into Doddridge county, and at this writing is not yet defined; the wells are of good caliber and hold up well. The Big Flint district in Doddridge county, has doubled in area during the year, and is not yet fully defined. Some large wells have recently been completed, and the out-look in this and the Beech Run district seems to be the most promising in West Virginia. The Eagle Mills district, on the line of Doddridge and Tyler counties, a few miles to the northwest of the Big Flint district, has doubled its area and its production during the year. The eastern and northern limits of this field seem to be defined, but, some operators think it will eventually connect with the new Indian Creek pool in Tyler county, some 3½ miles distant, and there has been no drilling yet done that contradicts their theory.

The production of crude petroleum in West Virginia, by months, from 1890 to 1895 is shown in the following table:

TABLE NO. 68.

*Total production of crude petroleum in West Virginia, by months from 1890 to 1895.*

Month.	1890	1891	1892	1893	1894	1895
January .....	38,614	48,902	195,512	577,938	838,400	647,220
February .....	38,061	123,841	186,455	468,794	684,532	541,511
March .....	41,812	229,966	185,468	630,877	754,398	612,222
April .....	39,404	226,020	181,708	594,190	638,458	646,862
May .....	39,160	232,076	206,142	705,714	742,701	670,330
June .....	35,610	223,734	261,900	682,040	639,498	62,733
July .....	34,696	221,127	328,485	724,494	767,728	742,326
August .....	31,505	238,451	411,114	843,706	717,844	734,517
September .....	50,342	219,528	420,882	847,558	674,791	717,170
October .....	46,387	220,076	451,157	792,719	694,187	713,138
November .....	45,062	207,477	467,446	757,170	654,887	721,411
December .....	49,065	215,020	513,817	820,217	660,200	721,685
Total .....	492,578	2,406,218	3,810,086	8,445,412	8,576,624	8,120,125

In the following table is given the production of petroleum in West Virginia in the years 1894 and 1895, by districts :

TABLE NO. 69.

*Total amount and value of petroleum produced in West Virginia in 1894 and 1895.*

District.	1894.					
	Illuminating.			Lubricating.		
	Produc- tion.	Value.	Price per barrel.	Produc- tion.	Value.	Price per barrel.
West Virginia .....	<i>Barrels.</i> 8,553,046	\$ 7,173,867	\$ 0.83%	<i>Barrels.</i> 8,553,046	\$ 7,173,867	\$ 0.83%
Volcano .....	2,560	2,176	.85	12,000	36,000	3.00
Petroleum .....	8,318	6,751	.80%	1,670	2,928	1.75
Total .....	8,563,924	7,182,794	.83 9-10	13,670	38,923	2.88
					7,221,717	.84

District.	1895.					
	Illuminating.			Lubricating.		
	Produc- tion.	Value.	Price per barrel.	Produc- tion.	Value.	Price per barrel.
West Virginia .....	<i>Barrels.</i> 8,105,341	\$ 10,013,132	\$ 1.35%	<i>Barrels.</i> 8,105,341	\$ 11,013,132	\$ 1.35%
Volcano .....	260	338	1.30	9,910	19,820	2.00
Petroleum .....	4,181	4,181	1.00	433	1,399	3.00
Total .....	8,109,782	11,017,651	1.35 6-7	10,343	21,119	2.04
				8,120,125	11,038,770	1.36

In the following table is given the production of oil in West Virginia from the beginning of operations, so far as obtainable:

TABLE NO. 70.

*Production of petroleum in West Virginia:*

Year.	Barrels.	Year.	Barrels.
Previous to 1876.....	3 000 000	1887.....	145,000
1876.....	120,000	1888.....	119,448
1877.....	172,000	1889.....	544,113
1878.....	180,000	1890.....	492,578
1879.....	180 000	1891.....	2,406,218
1880.....	179,000	1892.....	3,810,086
1881.....	151,000	1893.....	8,415,412
1882.....	128,000	1894.....	8,577,624
1883.....	136,000	1895.....	8,120 125
1884.....	90 000		
1885.....	91,000	Total.....	37,179,604
1886.....	102,000		

### Production and Value of Petroleum, by Localities, in the United States.

The petroleum-producing localities in the United States remain about as they were in 1894, the only important addition to the producing territory being the Los Angeles district in southern California, but this is hardly to be regarded as new territory, as it is surrounded by the older producing districts of that section of the State.

Most of the oil produced in the United States in 1895 is still from the Appalachian district, all of that produced in New York, Pennsylvania, and West Virginia, together with that produced in Macksburg, the eastern and southern Ohio, and Mecca-Belden districts of Ohio, being from this great field. In this district there were produced in 1895 30,959,139 barrels, out of the total of 52,-983,526 barrels, or nearly 58½ per cent.

### TOTAL PRODUCTION AND VALUE.

In the following table is given a statement of the total amount and the total value of all crude petroleum produced in the United States in 1894 and 1895, by States and important districts:

TABLE NO. 71.

*Total amount and value of crude petroleum produced in the United States in 1894 and 1895.*

State and district.	1894.		1895.		Average. value per Barrel.
	Barrels.	Value.	Barrels.	Value.	
New York.....	942,431	\$790,461	912,949	\$1,210,468	1.35%
Pennsylvania:					
Pennsylvania.....	18,017,869	15,112,488	18,180,331	24,702,520	1.35%
Franklin.....	57,070	228,280	48,711	194,814	4.00
Smiths Ferry.....	2,620	2,198	2,400	3,261	1.35%
Total.....	18,077,559	15,342,966	18,231,442	24,900,630	
West Virginia:					
West Virginia.....	8,553,946	7,173,867	8,105,341	\$11,013,132	1.35%
Burning Springs.....	14,560	38,176	10,170	20,158	
Volcano.....	10,018	9,674	4,614	5,480	
Petroleum.....					
Total.....	8,577,624	7,221,717	8,120,125	11,038,770	
Ohio:					
Eastern.....	3,183,370	2,670,052	3,693,248	5,018,201	1.35%
Lima.....	13,607,844	6,531,765	15,850,609	11,372,412	.71%
Mecca-Belden.....	940	4,476	1,376	8,229	
Total.....	16,792,154	9,206,293	19,545,233	16,399,242	
Indiana.....	3,688,666	1,774,260	4,386,132	2,807,124	.64
Kentucky.....	1,500	450	1,500	600	.40
Missouri.....	8	40	10	50	
Colorado.....	515,746	303,652	529,482	899,313	.754
California.....	705,969	823,423	1,208,482	849,082	.70
Texas.....	90	300	50	250	5.00
Indian Territory.....	130	810	37	252	
Illinois.....	300	1,800	200	1,200	6.00
Wyoming.....	2,369	15,920	3,455	27,640	8.00
Kansas.....	40,000	40,000	44,430	26,658	.60
Grand total.....	49,344,516	35,522,095	52,983,526	57,691,279	1.0888

From the above table it will be seen that the total production of petroleum in the United States in 1895 was 52,983,526 barrels, as compared with 49,344,516 barrels in 1894, an increase of 3,639,010 barrels, or a little over 7 per cent. Ohio, Indiana, and California show notable increase in production.

#### VALUE OF PETROLEUM PRODUCED IN 1895.

The total value of the petroleum produced in 1895 was \$57,691,279, or \$1.09 a barrel, as compared with \$35,522,095, or nearly 72 cents a barrel, in 1894. The price per barrel ranged from 40 cents in Kentucky to \$8 in Wyoming. The average value of certificate oil, which includes most of that produced in the Appalachian field, in 1895 was \$1.35½. The average value of Lima oil was 71½ cents per barrel; of Indiana oil, 64 cents; of Franklin oil, \$4; Colorado

oil, 75.4 cents; of California oil, 70 cents; of Wyoming oil, \$8, and of Kansas oil, 60 cents.

### PRODUCTION BY FIELDS.

The production of petroleum in the chief producing fields of the United States in 1894 and 1895 was as follows:

TABLE NO. 72.

*Production of Petroleum in the United States in 1894 and 1895, by fields.*

[Barrels of 42 gallons]

Field.	Production.	
	1894	1895
Appalachian.....	80,781,924	80,959,139
Lima-Indiana.....	17,296,510	20,238,741
Florence, Colorado.....	515,746	530,482
Southern California.....	703,969	1,208,482
Kansas.....	40,000	44,430
Wyoming.....	2,369	3,455
Other.....	1,998	1,797
Total .....	49,344,516	52,983,526

From the above table it will be noted that every field named in the United States shows an increase in production in 1895 as compared with 1894. The increase in the Appalachian field was fifty-seven one-hundredths of 1 per cent.; in the Lima Indiana field, 17 per cent.; in the Florence, Colo., field, 2 6 per cent; in the southern California field, 71 per cent.; in the Kansas field, 11 per cent., and in the Wyoming field, nearly 50 per cent.

### PRODUCTION OF CRUDE PETROLEUM IN THE UNITED STATES, 1859 TO 1895.

In the following table will be found a statement of the production of crude petroleum in the United States from the beginning of production, marked by the drilling of the Drake well in 1859, up to and including the production of 1895, the table being by years and States.

TABLE NO. 73.

*Product of Crude Petroleum in the United States from 1859 to 1895.*

[Barrels.]

Year.	Pennsylvania and New York.	Ohio.	West Vir- ginia.	Colorado	Califor- nia	Indiana.
1859	2 000					
1860	500,000					
1861	2,113,609					
1862	3 056,690					
1863	2 611,309					
1864	2,113,109					
1865	2,497,700					
1866	3,597,700					
1867	3,347,300					
1868	3,646,117					
1869	4,215,000					
1870	5,260,745					
1871	5,245,234					
1872	6,293,194					
1873	9,893,786					
1874	10,926,945					
1875	8,787,514	2,200,000	23,000,000		2,175,000	
1876	8,968,906	31,763	120,000		12,000	
1877	13,185,475	29,888	172,000		13,000	
1878	15,163,462	38,179	180,000		15,227	
1879	19,685,176	29,112	180,000		19,858	
1880	26,027,631	38,940	179,000		40,552	
1881	27,376,509	33,867	151,000		99,662	
1882	30,053,500	39,761	128,000		128,636	
1883	23,128,309	47,632	126,000		142,857	
1884	23,772,209	90,081	90,000		962,000	
1885	20,776,041	661,580	91,000		325,000	
1886	25,798,000	1,782,970	102,000		377,145	
1887	22,356,193	5,022,632	145,000	76,295	678,572	
1888	16,488,668	10,010,868	119,448	297,612	690,333	
1889	21,487,435	12,471,466	544,113	316,476	303,220	33,375
1890	28,458,208	14,124,656	492,578	368,842	307,360	61,495
1891	33,09,236	17,740,301	2,406,218	665,482	323,600	136,634
1892	28,422,377	16,362,921	3,810,086	821,000	385,049	668,060
1893	20,314,513	16,249,769	8,445,412	594,390	470,179	2,335,293
1894	19,019,990	16,702,154	8,577,624	515,746	705,969	3,638,666
1895	19,144,390	19,545,233	8,120,125	629,482	1,208,482	4,386,132
Total	516,657,260	133,343,778	37,179,604	4,188,325	6,683,901	11,841,664

a Including all production prior to 1876 in Ohio, West Virginia and California.

TABLE NO. 74.

*Product of crude petroleum in the United States from 1859 to 1895—Continued.*

[Barrels.]

Year.	Kentucky and Tennessee.	Illinois.	Kansas.	Texas.	Mis- souri.	Indian Terri- tory	Wyoming.	United States.
1859.....								2 000
1860.....								500,000
1861.....								2,113,909
1862.....								23 056,690
1863.....								2,611,309
1864.....								2,116,109
1865.....								2,497,700
1866.....								3,597,700
1867.....								3,347,300
1868.....								3,646,117
1869.....								4,215,000
1870.....								5,260,745
1871.....								5,205,234
1872.....								6,293,194
1873.....								9,893,786
1874.....								10,926,945
1875.....								612,162,514
1876.....								9,132,669
1877.....								13,350,363
1878.....								15,396,868
1879.....								19,914,146
1880.....								26,286,123
1881.....								27,661,238
1882.....	c160,933							30,510,830
1883.....	4,755							23,449,633
1884.....	4,148							24,218,438
1885.....	5,164							21,858,785
1886.....	4,726							28,061,841
1887.....	4,791							28,283,493
1888.....	5,096							27,612,025
1889.....	5,400	1,460	500	48	20			35 163,513
1890.....	6,000		1,200	54	278			45,822,672
1891.....	9 000		1,400	54	25	30		54,291,990
1892.....	6,500			45	10	80		50,509,136
1893.....	3,000			50	50	10		48,412,666
1894.....	1,500	300	40,000	60	8	130	2,369	49,344,516
1895.....	1,500	200	44,430	50	10	37	3,456	52,983,528
Total.....	222,513	1,960	87,530	361	401	287	5,824	709,713,403

a In addition to this amount, it is estimated that for want of a market some 10,000,000 barrels ran to waste in and prior to 1882 from the Pennsylvania fields; also a large amount from West Virginia and Tennessee.

b Including all production prior to 1876 in Ohio, West Virginia and California.

c This includes all the petroleum produced in Kentucky and Tennessee prior to 1883.

From the above table it appears that the enormous total of 709,713,403 barrels of crude petroleum have been produced in the United States since the beginning of operations at Titusville, Pa., in 1859. By far the largest portion of this has been produced in what is known as the "Pennsylvania and New York oil fields," these fields producing alone 516,657,260 barrels of the total of 709,713,403 barrels, or nearly 73 per cent. Ohio has produced 133,343,773 barrels and West Virginia 37,179,604 barrels; California and Colorado have produced, respectively, 6,683,901 and 4,188,325 barrels, while Indiana, which did not figure as a pro-



ducer of petroleum until 1889, has produced 11,341,664 barrels, more than one-third of which was produced in 1895.

For convenience of reference a statement is given below of the production of petroleum in the United States from 1890 to 1895, by States:

TABLE NO. 75.

*Production of petroleum in the United States from 1890 to 1895.*

[Barrels of 42 gallons.]

State.	1890	1891	1892
Pennsylvania and New York.....	28,458,208	33,009,236	28,423,377
Ohio.....	16,124,656	17,740,301	16,362,921
West Virginia.....	492,578	22,406,218	3,810,086
Colorado.....	368,812	668,482	824,000
California.....	307,360	323,600	345,000
Indiana.....	63,496	136,634	694,068
Kentucky.....	6,000	9,000	6,500
Illinois.....			
Kansas.....	1,200	1,400	
Texas.....	64	54	45
Missouri.....	278	25	10
Indian Territory.....		30	80
Wyoming.....			
Total.....	45,822,672	54,291,980	50,509,136

State.	1893	1894	1895
Pennsylvania and New York.....	20,314,513	19,019,990	19,144,39
Ohio.....	16,249,769	16,792,154	19,545,233
West Virginia.....	8,445,412	8,577,624	8,120,125
Colorado.....	594,390	515,746	529,482
California.....	470,179	705,969	1,208,482
Indiana.....	2,335,293	3,688,666	4,386,132
Kentucky.....	3,000	1,500	1,500
Illinois.....		300	200
Kansas.....		40,000	44,430
Texas.....	50	60	30
Missouri.....	50	8	10
Indian Territory.....	10	130	37
Wyoming.....		2,369	3,455
Total.....	48,422,666	49,334,516	52,983,126

### EXPORTS.

In the following table are given the exports of crude petroleum and its products from the United States from 1871 to 1895, together with a statement of the production of the United States in the years named. The figures of exports are from the Statistical Abstract of the United States, published by the Bureau of Statistics, Treasury Department. The figures of production were collected by the writer.

TABLE NO. 76.

*Quantity of crude petroleum produced in, and the quantities and values of petroleum products exported from, the United States during each of the calendar years from 1871 to 1895, inclusive.*

Year ending December 31—	Production.		Exports				
	Barrels (of 42 gallons).	Gallons.	Mineral, crude (including all natural oils without regard to gravity).				
			Mineral, refined or manufactured.				
			Illuminated.				
		Naphthas, benzine, gaso- line, etc.					
		Gallons.	Dollars.	Gallons.	Dollars.	Gallons.	Dollars.
1871.....	5,205,234	218,619,898	11,278,599	2,171,706	8,396,905	132,173,843	23,493,361
1872.....	6,203,194	264,814,148	16,383,975	2,761,094	8,636,257	118,259,932	39,456,453
1873.....	9,803,786	415,539,012	19,613,740	2,665,171	10,250,497	207,595,988	41,367,696
1874.....	10,928,945	458,881,690	14,430,851	1,428,494	10,618,614	206,562,977	30,168,747
1875.....	12,162,514	510,625,588	16,536,800	1,738,584	11,048,728	203,618,716	28,168,572
1876.....	9,132,699	383,572,098	25,313,271	8,313,761	13,553,726	220,811,608	44,069,066
1877.....	13,350,383	549,715,246	28,773,233	8,247,809	19,566,909	307,873,943	51,366,205
1878.....	16,896,988	646,693,456	24,049,604	2,169,700	18,431,782	306,212,916	36,866,798
1879.....	19,914,146	836,394,122	28,601,960	2,069,458	19,623,588	365,571,467	32,811,756
1880.....	27,661,288	1,161,771,966	38,718,118	2,772,400	16,115,131	441,666,616	42,122,683
1881.....	30,510,439	1,291,454,890	45,011,154	3,373,802	16,908,539	428,424,581	39,470,352
1882.....	23,449,653	1,084,884,588	50,168,537	4,489,067	17,365,314	440,150,600	37,625,981
1883.....	24,214,438	1,017,161,306	79,619,369	6,102,810	13,676,421	433,561,275	39,450,794
1884.....	21,888,785	916,068,970	81,435,669	6,040,685	14,738,469	445,980,118	39,476,062
1885.....	25,064,811	1,175,966,266	78,846,480	5,008,409	1,249,736	485,120,680	39,012,922
1886.....	27,612,025	1,187,723,322	80,680,286	5,141,853	12,382,213	485,212,107	37,007,336
1887.....	35,168,513	1,470,867,546	77,649,462	5,484,705	13,481,706	455,048,784	37,236,111
1888.....	45,822,672	1,824,582,224	96,572,635	6,181,002	12,008,116	531,769,668	37,115,192
1889.....	54,291,960	2,250,263,160	96,722,817	6,365,499	12,466,636	550,573,438	39,896,066
1890.....	48,412,866	2,074,466,672	101,397,107	5,365,579	11,434,968	531,445,099	34,579,769
1891.....	48,412,866	2,074,466,672	111,703,508	4,567,391	10,974,558	589,418,185	31,816,516
1892.....	49,344,516	2,225,308,092	121,926,349	4,458,915	10,747,710	612,239,816	31,676,217
1893.....	53,963,526	2,225,308,092	111,286,161	5,161,710	14,801,224	730,388,628	34,706,844

TABLE NO 77.

Year ending December 31—	Exports—Continued.					
	Mineral, refined or manufactured— Continued.		Residuum (tar, pitch, and all oth- er from which the light bodies have been distilled)		Total.	
	Lubricating (heavy paraffin, etc.)					
	Gallons.	Dollars.	Gallons.	Dollars.	Gallons.	Dollars.
1871	240,228	92,408	101,052	10,450	152,195,617	36,663,825
1872	438,425	180,462	563,218	56,618	144,318,707	33,761,685
1873	1,502,504	517,466	1,377,809	117,595	210,369,908	45,924,880
1874	924,068	298,861	2,501,628	177,794	235,108,168	33,042,276
1875	938,022	265,837	2,344,986	169,671	237,526,312	31,734,861
1876	1,157,929	374,431	2,864,896	239,461	263,449,455	49,545,219
1877	1,914,139	577,610	4,254,102	390,077	361,832,225	57,539,873
1878	2,525,545	698,182	3,126,816	220,835	349,346,253	41,022,067
1879	3,163,561	713,208	4,827,522	273,050	421,719,782	37,235,467
1880	5,617,009	1,141,825	3,177,630	198,983	316,770,443	34,505,645
1881	5,653,862	1,165,665	3,746,018	197,321	514,561,719	48,556,103
1882	8,821,566	2,034,487	4,265,352	275,263	503,492,162	44,623,074
1883	10,108,391	2,103,245	6,502,554	465,350	533,145,429	47,763,079
1884	11,985,219	2,443,345	5,303,298	375,599	544,495,608	49,457,116
1885	12,978,955	2,659,210	5,713,068	344,767	560,781,459	49,671,743
1886	13,944,387	2,689,461	1,033,824	109,673	591,884,302	48,145,404
1887	2,582,613	3,559,280	2,989,098	141,350	601,816,317	46,898,842
1888	24,510,437	4,215,449	1,875,596	116,049	572,457,976	48,105,703
1889	27,933,267	4,634,724	1,884,418	97,261	690,705,456	53,293,299
1890	32,090,537	4,766,854	1,830,612	91,945	693,629,848	52,270,953
1891	33,310,261	4,909,978	1,002,414	61,382	673,905,577	46,174,835
1892	34,026,855	5,130,643	403,032	38,220	744,638,463	42,799,157
1893	32,432,857	4,738,892	541,444	41,661	814,221,230	42,142,658
1894	40,190,577	5,449,006	211,008	14,704	908,352,314	41,499,806
1895	43,418,942	5,867,477	137,508	13,063	884,502,082	46,660,082

## Foreign Markets.

In the following table is given a statement showing the foreign markets for our oil in the past six years. As will be seen from this table, the total exports of illuminating oils have increased.

TABLE No. 78.

*Exports of Petroleum in its various forms from the United States from 1890 to 1895, by countries*

COUNTRIES.	1890	1891	1892	1893	1894	1895
<b>CRUDE.</b>						
Europe:	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.
France .....	68,947,438	61,683,973	63,100,657	69,424,604	84,434,953	72,802,459
Germany .....	1,184,266	3,107,137	5,247,209	4,182,968	4,877,593	3,966,870
Spain .....	15,934,068	17,103,416	17,064,929	21,112,042	15,176,084	15,188,547
United Kingdom .....						3,987,013
Other Europe .....	3,680,631	2,380,600	1,935,014	3,948,842	2,009,727	2,590,441
Total .....	87,750,421	84,255,126	93,347,809	98,668,456	106,498,307	98,545,330
North America:						
Mexico .....	2,217,816	3,854,176	3,499,514	5,508,769	8,026,189	5,229,983
Cuba .....	4,914,330	3,300,455	6,316,406	6,915,315	6,865,549	6,980,372
Other North America .....	36,806	4,338	425,348	548,068	523,304	523,579
Total .....	7,167,952	7,158,969	10,241,268	13,012,152	15,426,042	12,733,934
All other countries .....	532,250	1,000	3,690	22,900	2,000	6,000
Total crude .....	95,450,633	91,415,095	103,592,767	111,703,508	121,926,349	111,285,264
<b>REFINED.</b>						
<i>Naphthas.</i>						
Europe:						
France .....	4,195,704	2,331,929	1,561,284	4,080,831	3,761,509	1,564,360
Germany .....	2,015,298	3,227,106	3,471,632	4,127,351	4,278,757	4,900,028
United Kingdom .....	5,613,994	5,058,325	6,813,416	8,209,526	6,834,760	7,343,355
Other Europe .....	928,616	824,537	686,398	658,270	364,135	577,378
Total .....	12,743,612	11,911,897	12,532,750	17,076,988	15,242,221	14,385,121
North America .....	59,563	86,910	35,762	122,237	173,649	230,269
South America .....	78,180	71,192	89,609	55,947	79,777	135,752
Asia and Oceania .....	45,214	55,005	57,787	39,625	57,037	45,217
Africa .....	10,864	16,143	12,070	9,214	3,050	4,866
Total .....	193,821	229,250	195,228	227,016	313,533	416,103
Total naphthas .....	12,937,433	12,171,147	12,727,978	17,304,003	15,555,754	14,801,224
<b>ILLUMINATING.</b>						
Europe:						
Belgium .....	41,391,323	32,397,015	31,471,121	33,541,439	36,312,974	35,385,765
Denmark .....	7,147,115	9,135,043	7,019,575	12,262,308	9,390,251	14,626,436
France .....	2,088,291	3,761,974	3,005,535	8,161,023	11,812,001	6,204,663
Germany .....	140,264,082	162,187,071	133,417,314	119,277,484	86,388,785	100,829,413
Italy .....	19,747,758	20,955,728	22,324,113	22,815,279	22,945,037	28,017,572
Netherlands .....	47,315,536	54,879,032	76,607,780	51,298,480	31,868,189	46,900,640
Sweden and Norway .....	11,721,008	8,957,350	11,169,824	16,317,922	9,848,074	24,623,246
United Kingdom .....	66,393,246	81,028,539	94,901,777	180,936,321	274,555,010	279,064,424
Other Europe .....	7,464,013	8,759,531	6,450,040	8,054,660	7,232,024	6,586,826
Total .....	313,583,460	382,064,273	386,357,079	453,319,916	490,252,345	541,238,985

TABLE NO. 79.

*Report of Petroleum in its Various Forms from the United States  
from 1890 to 1895, by Counties—Continued.*

Coun ries.	1890	1891	1892	1893	1894	1895
<b>REFINED—Continued.</b>						
<b>ILLUMINATING—Continued</b>						
North America:	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.
British North America .....	5,104,864	5,230,259	5,735,411	6,311,042	8,218,417	7,621,352
West Indies .....	4,404,548	3,303,506	4,262,935	4,439,118	4,174,856	4,109,358
Other North America .....	2,520,131	3,303,608	2,250,162	2,204,602	1,759,565	1,501,157
Total .....	12,029,543	11,837,373	12,248,508	12,954,762	14,152,838	13,231,867
South America.						
Argentina .....	3,113,750	3,476,192	4,835,196	4,770,719	3,162,846	5,876,742
Brazil .....	8,695,291	10,470,656	11,024,476	15,536,885	12,154,709	15,315,166
Uruguay .....	3,492,158	3,165,880	4,293,400	2,882,105	2,530,571	3,898,514
Other South America .....	6,26,596	4,792,161	6,827,814	6,041,571	5,503,680	7,245,123
Total .....	21,537,795	21,904,889	29,974,886	28,551,080	23,341,806	32,335,575
Asia and Oceania:						
China .....	13,072,000	27,160,660	17,370,609	27,874,230	40,377,298	18,022,800
Hongkong .....	11,150,220	10,814,630	16,529,700	12,758,820	16,888,820	10,595,610
East Indies .....	63,454,071	63,285,770	55,907,410	57,404,175	85,907,557	46,680,044
Japan .....	37,992,930	31,000,629	23,761,430	24,869,510	37,272,450	24,298,170
British Australasia .....	7,976,572	10,276,095	10,376,260	11,063,941	11,821,881	14,686,753
Other Asia and Oceania .....	3,982,465	4,630,690	3,095,516	2,637,250	2,944,958	3,636,230
Total .....	137,530,258	147,168,471	127,041,536	138,597,976	195,212,062	117,919,616
Africa .....	8,428,714	8,058,806	8,865,959	8,203,932	7,049,445	9,676,741
All other countries .....	187,320	85,990	403,650	579,150	329,220	456,360
Total illuminating .....	523,295,090	571,119,805	561,896,658	612,239,816	730,368,626	714,859,144
<b>LUBRICATING.</b>						
Europe:						
Belgium .....	1,955,145	2,337,030	2,632,954	2,426,926	2,931,204	2,679,832
France .....	3,088,187	3,948,257	2,461,722	2,423,659	3,050,547	3,271,804
Germany .....	3,670,937	4,186,225	4,512,639	3,798,953	5,637,471	5,378,398
Italy .....	510,622	591,996	404,971	788,805	1,356,340	1,381,587
Netherlands .....	2,037,437	1,501,623	2,229,116	1,842,608	2,346,896	2,641,207
United Kingdom .....	17,035,447	18,767,573	18,779,806	17,683,132	19,668,767	21,209,467
Other Europe .....	146,557	111,165	209,713	249,474	415,385	520,025
Total .....	28,444,326	31,446,869	31,240,921	29,216,557	35,406,610	37,082,352
North America .....	524,898	570,380	656,991	1,043,770	1,725,709	1,565,025
South America .....	721,666	889,610	793,194	1,207,232	1,509,708	2,159,844
Asia and Oceania .....	457,363	582,392	813,618	888,032	1,433,191	2,438,975
Africa .....	14,264	25,479	81,352	77,266	115,359	172,746
Total .....	1,718,191	2,067,861	2,350,155	3,216,300	4,783,967	6,333,590
Total lubricating .....	30,162,522	33,514,730	33,591,076	32,432,857	40,190,577	43,418,943
<b>RESIDUUM BARRELS.</b>						
Europe .....	10,017	9,058	6,361	10,404	2,056	2,099
North America .....	44,141	28,833	6,222	2,202	2,460	1,045
All other countries .....	758	175	287	276	513	130
Total residuum .....	54,916	38,066	13,270	12,882	5,029	3,274

## Production by States and Foreign Countries.

### APPALACHIAN OIL FIELD.

The Appalachian oil field includes those oil producing territories that lie within the limits of well known and well defined Appalachian region of the eastern part of the United States. In the production of this field is included the petroleum output of New York, Pennsylvania, West Virginia, the eastern part of Ohio, and those portions of Kentucky, Tennessee, Alabama, and Georgia that are within the limits of the Appalachian region. The production of oil, however, in this region at the present time is confined chiefly to New York, Pennsylvania, West Virginia, and eastern Ohio.

The older districts in this territory are well known and have been frequently described in these reports.

#### PRODUCTION OF THE APPALACHIAN OIL FIELD FROM 1889 TO 1895.

Bearing in mind what has been so frequently said in these reports as to the difficulty of dividing the production by States, we give the following estimate as to the production of petroleum in the Appalachian oil field from 1889 to 1895, showing the production of the three chief producing divisions, namely: (1) Pennsylvania and New York; (2) West Virginia (3) eastern Ohio.

TABLE NO. 80.

#### *Production of Petroleum in the Appalachian Oil Field from 1889 to 1895.*

[Barrels of 42 gallons.]

Year.	Pennsylvania and New York	West Vir- ginia.	Eastern Ohio	Total.
1889.....	21,487,435	544,113	318,277	82,349,835
1890.....	28,458,208	492,578	1,116,521	30,067,307
1891.....	33,009,236	2,406,278	424,323	35,839,777
1892.....	28,422,377	380,086	1,193,414	33,425,877
1893.....	20,314,513	8,445,412	2,602,965	31,362,890
1894.....	19,619,960	8,577,621	3,184,370	30,781,924
1895.....	19,144,390	8,120,125	3,694,624	30,959,139

From the above table it appears that the production in this field for the last two years has been practically the same, but much below the production of 1891. The production in 1891 was 33,425,877 barrels. The production fell off about 2,400,000 barrels in 1892 as compared with 1891. It was again reduced by about 2,100,000 barrels in 1893, and still further by some 600,000 barrels in 1894, but the year 1895 shows an increase, though of something less than 200,000 barrels.

## PRODUCTION IN THE APPALACHIAN OIL FIELD, BY MONTHS.

In the following table is given the production of crude petroleum in the Appalachian oil field from 1890 to 1895, by months:

TABLE 81.

*Production of crude petroleum in the Appalachian field from 1890 to 1895, by months.*

[Barrels.]

Month.	1890	1891	1892	1893	1894	1895
January .....	2,170,947	2,069,164	3,016,032	2,491,853	2,627,123	2,469,941
February .....	2,102,264	2,451,901	2,923,272	2,350,490	2,330,582	2,083,087
March .....	2,384,864	2,618,394	2,885,531	2,769,501	2,671,051	2,504,645
April .....	2,381,786	2,592,998	2,802,221	2,493,590	2,494,772	2,588,727
May .....	2,451,491	2,519,787	2,741,818	2,673,618	2,654,269	2,586,710
June .....	2,450,622	2,565,856	2,757,436	2,669,110	2,637,416	2,488,551
July .....	2,643,281	2,740,907	2,750,309	2,658,141	2,659,718	2,673,621
August .....	2,598,332	2,470,797	2,851,348	2,777,351	2,605,494	2,753,417
September .....	2,666,877	3,078,801	2,694,166	2,682,246	2,465,689	2,685,766
October .....	2,858,500	3,823,643	2,729,444	2,651,591	2,638,689	2,717,958
November .....	2,676,825	4,070,287	2,606,646	2,513,281	2,460,880	2,661,700
December .....	2,721,558	3,828,242	2,654,584	2,652,038	2,536,211	2,745,016
Total .....	30,067,307	35,539,777	33,425,877	31,362,890	30,781,924	30,959,139

From the above table it appears that the average monthly production of crude petroleum in the Appalachian field in 1895 was 2,579,928 barrels, and that the production in each month was remarkably uniform when the number of days in the month is taken into consideration. There are no notable increases of production in any one month in 1895 as there was in 1891, when, in the month of November, the total production was 4,070,287 barrels, as compared with 2,540,907 barrels in the July previous, the month of November of that year indicating the time of highest production in the McDonald field.

## AVERAGE DAILY PRODUCTION OF THE APPALACHIAN FIELD FROM 1890 TO 1895.

The figures that are usually in the mind of the oil operator, either producer, refiner, or dealer, when production is spoken of is the average daily production.

This is given in the following table for the years from 1890 to 1895. These averages are ascertained by dividing the production of each month by the number of days in the month, and the average for the year is obtained by dividing the total production of the year by 365 or 366, as the case may be.

TABLE NO. 82.

*Average daily product of crude petroleum in the Appalachian field each month for the years 1890 to 1895, by months and years.*

[Barrels.]

Month.	1890	1891	1892	1893	1894	1895
January .....	70,030	95,747	97,292	80,382	84,746	79,676
February .....	75,081	87,563	100,802	83,916	84,245	74,398
March .....	76,931	84,464	93,082	89,349	86,163	80,795
April .....	79,393	86,423	93,407	83,120	83,159	86,291
May .....	79,079	82,251	88,447	86,217	85,622	83,443
June .....	81,687	85,529	91,915	88,970	87,914	82,952
July .....	83,977	81,965	89,010	85,746	85,797	86,246
August .....	83,817	88,412	91,479	88,947	81,048	88,870
September .....	88,896	102,900	83,940	89,410	82,190	89,526
October .....	92,210	123,313	84,047	85,515	85,119	87,076
November .....	89,228	135,676	86,888	83,776	82,030	88,723
December .....	87,792	123,402	85,631	85,550	81,813	88,549
Average .....	82,376	93,191	91,328	85,926	84,334	84,820

As usually given, the tables of average daily production include only the average daily receipts from wells as published by the pipe lines—that is, the average of the runs from the wells, as they are usually termed. By the above table is meant the average total production, including some oil that is not reported in the daily returns of pipe-line runs. The average daily production in the Appalachian field for the last six months of the year was somewhat in excess of the first six months. The range of average daily production from July to December, however, was from 86,246 barrels in July to 89,526 barrels in September, and 88,549 barrels in December. The range, however, for the first six months was from 74,396 barrels in February to 86,291 barrels in April.

#### PIPE-LINE RUNS IN THE APPALACHIAN OIL FIELD IN 1895.

Usually the terms “production” and “pipe-line runs” are regarded as synonymous, but production is somewhat in excess of runs. The expression “pipe-line runs” means the amounts of oil which the several pipe lines receive from the wells. If all oil were sent from the wells by pipe lines, these lines would indicate the total production of petroleum in a given year less the oil remaining in tanks at the wells. In other words, on the basis that all oil was shipped from the wells by pipe lines, the total production of a year would be the total runs plus the stocks of oil on hand at the wells at the close of the year minus the well stocks at the beginning of the year. However, as some oil is not sent to the pipe lines, the table of production of the Appalachian oil field, as given elsewhere, will be greater than the pipe line runs. The production of the Appalachian field in 1895 is given as 30,959,139 barrels. The pipe-line runs are 30,351,414 barrels, making a difference between the pipe-line runs and the production of 607,725.



In the following table will be found the pipe-line runs in the Appalachian oil field in 1895, by lines and by months:

TABLE NO. 83.

*Pipe-line runs in the Appalachian oil field in 1895, by lines and months.*

[Barrels.]

Month.	National Transit.	Tide-Water	Southwest	Franklin	Eureka.	Elk.
January.....	714,765	143,661	403,358	2,802	599,712	19,518
February.....	608,034	116,773	334,774	2,457	533,666	16,992
March.....	729,440	140,445	408,101	5,892	597,532	20,660
April.....	802,106	165,561	397,854	4,882	593,580	19,090
May.....	765,829	145,015	423,215	3,981	608,547	18,915
June.....	748,404	151,117	426,160	5,031	561,094	17,498
July.....	767,567	149,239	480,880	4,222	609,394	19,760
August.....	759,728	156,631	470,679	3,674	654,289	19,749
September.....	730,075	142,813	447,485	4,878	634,151	21,468
October.....	751,823	147,057	449,810	3,656	625,104	22,101
November.....	739,644	147,893	450,738	3,744	619,013	21,997
December.....	756,291	161,025	560,093	3,476	707,268	26,179
Total.....	8,863,706	1,803,636	5,253,378	48,711	7,313,251	243,839

Month.	Emery.	Mellon.	Producers and Refiners' Pipe Line Company, Limited.	Buckeye- Macksburg	Total.
January.....	28,256	161,486	142,435	94,999	2,310,195
February.....	21,067	132,123	117,272	181,155	2,034,353
March.....	29,321	171,890	130,385	220,883	2,460,555
April.....	27,405	172,315	126,561	229,159	2,568,948
May.....	28,163	183,606	129,937	225,816	2,533,024
June.....	25,963	167,226	131,045	237,613	2,452,171
July.....	28,874	194,635	142,453	251,003	2,617,933
August.....	29,476	193,560	142,118	279,602	2,711,450
September.....	27,618	203,217	125,788	310,400	2,647,874
October.....	27,460	207,060	119,470	322,439	2,676,010
November.....	28,060	196,198	122,382	286,932	2,616,601
December.....	25,990	.....	124,531	324,447	2,692,300
Total.....	330,663	1,985,376	1,554,376	2,954,478	30,351,414

### SHIPMENTS OF OIL FROM THE APPALACHIAN FIELD.

In the following table are given the total deliveries of petroleum by the lines of the Appalachian oil field from 1889 to 1895, by years and months. These figures must not be regarded as showing the actual consumption of the petroleum produced in this field. To them must be added, in order to ascertain what becomes of oil produced in this region, all of the sediment, dump oil, or oil that does not pass through the pipe lines, as well as the oil that is destroyed by fire or accident, or disposed of in other ways than by refining and direct consumption. There is also a certain amount of loss by evaporation and otherwise. This is provided for by

pipe lines in receiving oil from the producers, a certain number of gallons per barrel being allowed for such loss. Forty four gallons are usually delivered to the pipe line as a barrel, but certificates are issued for 42 gallons only.

The table given below only shows the deliveries of oil to customers in the regular way of business. The total consumption of oil during the year can be ascertained only by adding to the production of a year the stocks at the beginning of a year and subtracting from this total the stocks at the close of the year. This will in no case be the same as deliveries. For example, at the close of 1894 the total stocks of petroleum in the Appalachian field reported in tanks was 6,499,880 barrels. The total production of this field in 1895 was 30,959,139 barrels, making a total of stocks at the beginning of the year and production during the year of 37,459,019 barrels. The total stocks at the close of the year were 5,344,784 barrels, which, subtracted from the above total of available petroleum for 1894, namely, 37,459,019, leaves a remainder of 32,114,235 barrels, which may be regarded as the total consumption of the oil produced in the Appalachian field. Pipe line deliveries were, however, but 32,032,626 barrels, which shows a consumption during 1895 of 81,609 barrels more than the pipe-line deliveries. This excess is made up of dump oil, direct deliveries, waste, and the amounts which were from time time to credited by the pipe-line companies for increase in "B. S."

TABLE NO. 84.

*Total shipments of petroleum in the Appalachian oil field from 1889 to 1895, by months.*

[Barrels.]

Month.	1889	1890	1891	1892
January.....	2,400,456	2,681,616	2,475,783	2,420,825
February.....	2,388,229	2,185,007	2,170,172	2,443,546
March.....	2,286,918	2,184,018	2,430,705	2,586,075
April.....	2,244,615	2,348,385	2,157,655	2,338,421
May.....	2,265,150	2,488,036	2,074,199	2,278,027
June.....	2,277,214	2,502,558	2,183,811	2,108,386
July.....	2,964,868	2,687,611	2,280,996	2,314,405
August.....	2,640,431	2,645,394	2,498,573	2,626,043
September.....	2,590,127	2,711,887	2,704,645	2,770,472
October.....	2,797,732	2,784,121	2,802,354	2,824,508
November.....	2,441,055	2,717,439	2,694,135	2,916,265
December.....	2,718,608	2,743,225	2,783,766	2,978,921
Average.....	2,492,953	2,557,023	2,427,187	2,550,491
Total.....	29,915,433	30,884,280	29,125,641	30,605,894

Month.	1893	1894	1895
January.....	2,957,358	3,141,722	3,140,861
February.....	2,584,712	2,656,025	2,808,804
March.....	2,813,938	2,912,594	2,638,232
April.....	2,866,199	2,846,805	2,781,379
May.....	3,033,700	2,819,413	2,845,334
June.....	3,074,443	2,914,400	2,816,698
July.....	3,319,658	2,927,038	2,634,880
August.....	3,248,873	3,256,397	2,424,843
September.....	3,000,740	2,966,864	2,332,271
October.....	3,316,911	3,271,371	2,573,915
November.....	3,046,578	3,308,569	2,655,325
December.....	3,152,238	3,286,087	2,410,084
Average.....	3,024,615	3,017,273	3,266,386
Total.....	36,295,381	36,207,275	2,032,626

From the above table it will be seen that the total shipments in 1895 of petroleum produced in the Appalachian field were nearly 4,000,000 barrels less than the shipments in 1894. The table shows an average consumption of 2,669,386 barrels a month, while the production was only about 2,579,928 barrels a month, the consumption being 1,073,487 barrels in excess of the production for the entire year, or nearly 90,000 barrels a month.

#### STOCKS OF PETROLEUM IN THE APPALACHIAN FIELD.

In the following table will be found a statement of the stocks of petroleum in the tanks of the pipe-line companies in the Appalachian oil field at the close of each month from 1889 to 1895:

TABLE NO. 85.

*Total stocks of petroleum in the Appalachian oil field at the close of each month from 1889 to 1895.*

[Barrels of 42 gallons.]

Month.	1889	1890	1891	1892
January .....	18,529,228	11,356,634	11,068,179	16,973,225
February .....	17,597,956	11,282,453	11,340,147	17,416,399
March .....	16,494,558	11,172,854	11,412,782	17,587,512
April .....	16,441,258	11,503,776	11,791,614	18,028,753
May .....	16,044,384	11,445,975	12,138,347	18,464,378
June .....	15,656,582	11,318,438	12,455,630	19,056,902
July .....	14,928,784	11,170,589	12,640,790	19,445,441
August .....	14,248,456	11,057,828	12,791,156	19,563,635
September .....	13,581,815	10,942,934	13,039,230	19,394,242
October .....	12,823,467	10,923,831	13,036,108	19,009,149
November .....	12,353,868	10,783,567	15,413,864	18,529,914
December .....	11,273,142	10,691,729	16,457,189	18,037,385
Average .....	15,089,489	11,162,547	12,874,494	18,461,495

Month.	1893	1894	1895
January .....	17,305,206	11,755,219	5,859,348
February .....	17,042,245	11,381,776	5,087,499
March .....	16,834,543	11,295,959	4,912,643
April .....	16,641,773	10,751,983	4,730,819
May .....	16,235,855	10,639,454	4,506,874
June .....	15,845,548	10,381,209	4,275,506
July .....	15,182,551	9,869,915	4,306,287
August .....	14,730,600	9,210,959	4,592,906
September .....	14,261,432	8,730,456	4,908,593
October .....	13,559,543	8,038,376	5,013,941
November .....	12,904,344	7,283,988	4,984,052
December .....	12,316,611	6,499,880	5,344,784
Average .....	15,242,520	9,653,515	4,879,775

The stocks in the above table do not include all of the stocks of oil held in the Appalachian region, but only those held by the pipe lines, stocks at the wells, as a rule, not being included unless the tanks at the wells are in the custody of the pipe line companies and the oil has been measured as it runs into them. A notable feature in this table is the great decline in average stocks held at the close of each month in 1895 as compared with stocks at a similar period for 1894. The average stocks held at the close of each month in 1894 were 9,653,515 barrels, while the average stocks for 1895 were but 4,879,775 barrels, or, roughly, about one-half.

#### PRICES OF CRUDE PETROLEUM IN THE APPALACHIAN OIL FIELD.

The prices of crude petroleum in the Appalachian oil field given in the following table, which is taken from Stowell's Petroleum Reporter, show the monthly and yearly average prices of pipe-line certificate or of crude petroleum at the primary markets from 1860 to 1894. In the earlier years covered by the table there were no pipe lines, and the price given for oil is the price per barrel either

at the wells or at some delivery point in the oil region, usually the price at the wells. In the later years the price given is that of pipe-line certificates, which, until recently, have been issued by the pipe-line companies, usually for 1,000 barrels each, to the owners of the oil in their tanks, these certificates being to bearer and transferable. The price quoted for these certificates is the price at the wells or at the tanks of the pipe lines near the wells into which the oil is received from the wells. As a rule the holder of the certificate desiring to receive the oil represented by the certificate could secure it from any of the tanks of the company wherever situated—that is, on a certificate (except in unusual cases calling for a given amount of oil of a certain grade) there was no statement as to where the oil covered by the certificate was to be delivered. In such cases, however, the pipe-line company is entitled to make a charge for storage and pipage, the storage charged per month, as well as the pipage, being regulated somewhat by the selling price of the oil. In the selling price of the oil, therefore, no charges for storage in the tanks nor for transportation are included. Practically, therefore, the prices given are the prices for the oil at or near the wells.

The average prices cover only the ordinary grades of oil. They do not include the prices of special oils, such as that from the Franklin district in Pennsylvania, or the lubricating oils from Petroleum or Volcano, in West Virginia, nor the oil from the Mecca-Belden district in Ohio, but only that grade of oil which is known as Pennsylvania oil and is used chiefly for the production of illuminants. It is also true that at certain times oils from different districts in the Appalachian field have been worth an advance on certificate oil, and frequently old oil or tank oil—that is, oil that has stood for some time in tanks—is worth less than fresh oil, or oil that has been recently produced. This is especially the case when there is a large demand for the lighter oils, fresh oils producing a larger percentage of the lighter products than old oil. These averages, it should be understood, are not true averages—that is, averages which consider the price and the quantity sold at that price—but they are averages of the prices obtained for certificates or for oil at the primary markets from day to day. It is probable that the true average prices would be slightly under the averages obtained by averaging the prices. The figures given in the following table are, under the circumstances, the only ones that can be ascertained, and do not vary much from the true average.

TABLE NO. 86.

*Monthly and yearly average prices of pipe-line certificates of crude petroleum at wells from 1860 to 1895.*

[Per Barrel.]

Year.	Jan.	Feb.	March.	April.	May.	June.	July.
1860.....	\$ 19 25	\$ 18 00	\$ 12 62½	\$ 11 00	\$ 10 00	\$ 9 50	\$ 8 62½
1861.....	1 00	1 00	1 00	62½	50	50	50
1862.....	10	15	22½	50	85	1 00	1 25
1863.....	2 25	2 50	2 82½	2 87½	2 87½	3 00	3 25
1864.....	4 00	4 37½	5 50	6 56	6 87½	9 50	12 12½
1865.....	8 25	7 50	6 00	6 00	7 37½	5 62½	5 12½
1866.....	4 50	4 40	3 75	3 95	4 50	3 87½	3 00
1867.....	1 87½	1 85	1 75	2 07½	2 35	1 90	2 62½
1868.....	1 45	2 00	2 55	2 82½	3 75	4 50	5 12½
1869.....	5 75	6 95	6 00	5 70	5 35	4 95	5 37½
1870.....	4 52½	4 52½	4 45	4 22½	4 40	4 17½	3 77½
1871.....	3 82½	4 38	4 25	4 01	4 60	3 85½	4 79
1872.....	4 02½	3 80	3 72½	3 52½	3 80	3 85	3 80
1873.....	2 60	2 20	2 12½	2 30	2 47½	2 21½	2 00
1874.....	1 20	1 40	1 60	1 90	1 62½	1 32½	1 02½
1875.....	1 03	1 52½	1 75	1 38½	1 40	1 26½	1 09
1876.....	1 80	2 60	2 01	2 02½	1 40½	2 01½	2 24½
1877.....	3 53½	2 70	2 67½	2 58	2 24	1 94½	2 07½
1878.....	1 43	1 63½	1 59	1 37½	1 35½	1 14	98½
1879.....	1 63	98	86½	78½	76	68½	69½
1880.....	1 10½	1 04½	88½	78	80	1 00	1 06½
1881.....	96½	90½	83½	86½	81½	81½	76½
1882.....	83½	84½	81½	78½	71½	54½	57½
1883.....	93½	1 01	97½	91½	1 00½	1 16½	1 05½
1884.....	1 11	1 04½	98½	94	85½	68½	61½
1885.....	70½	72½	80½	78½	79	82	92½
1886.....	88½	79½	77½	74½	70	66½	66
1887.....	70	64½	63½	64½	61½	62½	59½
1888.....	91½	91½	98½	82½	86½	75½	80½
1889.....	86½	89½	90½	88	83½	84½	95½
1890.....	1 05½	1 05½	90	82½	88½	84½	89½
1891.....	74½	78½	74½	71½	69½	68½	66½
1892.....	62½	60½	57½	57½	57½	54½	52½
1893.....	53½	57 ¾	65½	68½	58½	60½	57½
1894.....	79½	80 ¾	82	84½	86	89½	88½
1895.....	99	1 04 ¾	1 09½	1 79	1 74½	1 53½	1 46½

TABLE NO. 87.

*Monthly and yearly average prices of pipe-line certificates of crude petroleum at wells from 1860 to 1895—Continued.*

[Per barrel.]

Year.	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly average.
1860.....	\$ 7 50	\$ 6 62½	\$ 5 50	\$ 3 75	\$ 2 75	\$ 9 59
1861.....	1 25	20	10	10	10	49
1862.....	1 25	1 25	1 75	2 00	2 25	1 06
1863.....	3 37½	3 50	3 75	3 85	3 95	3 15
1864.....	10 12½	8 87½	7 75	10 00	11 00	8 06
1865.....	4 62½	6 75	8 12½	7 25	6 80	6 59
1866.....	3 75	4 50	3 39	3 10	2 12½	3 74
1867.....	3 15	3 40	3 65	2 50	1 87½	2 41
1868.....	4 57½	4 00	4 12½	3 75	4 35	3 62½
1869.....	5 57½	5 50	5 50	5 80	5 12½	5 63½
1870.....	3 15	3 25	3 27½	3 22½	3 40	3 86
1871.....	4 66	4 65	4 82½	4 25	4 00	4 34
1872.....	3 58½	3 25	3 15	3 83½	3 32½	3 64
1873.....	1 42½	1 15	1 20	1 25	1 00	1 83
1874.....	95	95	85	55	61½	1 17
1875.....	1 13	1 33	1 32½	1 44	1 55	1 35
1876.....	2 71½	3 81	3 37½	3 11	3 73	2 56½
1877.....	2 51	2 38	2 56½	1 91	1 80	2 42
1878.....	1 01	86½	82½	89½	1 16	1 19
1879.....	67½	69½	88½	1 05½	1 18½	85½
1880.....	91	66	96½	91½	91½	94½
1881.....	78½	97½	91½	85½	84½	85½
1882.....	58½	72½	93½	1 14	96	78½
1883.....	1 08	1 12½	1 11½	1 14½	1 14½	1 05½
1884.....	81½	78	71½	72½	74½	83½
1885.....	1 00½	1 00½	1 05½	1 04½	89½	87½
1886.....	62½	63½	65½	71½	70½	71½
1887.....	60½	67	70½	73½	80½	66½
1888.....	90½	93½	90½	85½	89½	87½
1889.....	99½	99½	1 01½	1 08½	1 04½	91½
1890.....	89½	81½	80½	72½	67½	86½
1891.....	64	58½	60½	58½	59½	67
1892.....	55	54½	51½	52	53½	55½
1893.....	58½	64½	70½	73½	78½	64
1894.....	81	83	83	88	91½	83½
1895.....	1 26 1-6	1 22½	1 24½	1 48½	1 42	1 35½

From the above table it will be seen that the average price of petroleum in 1895 was higher than it has been since 1877.



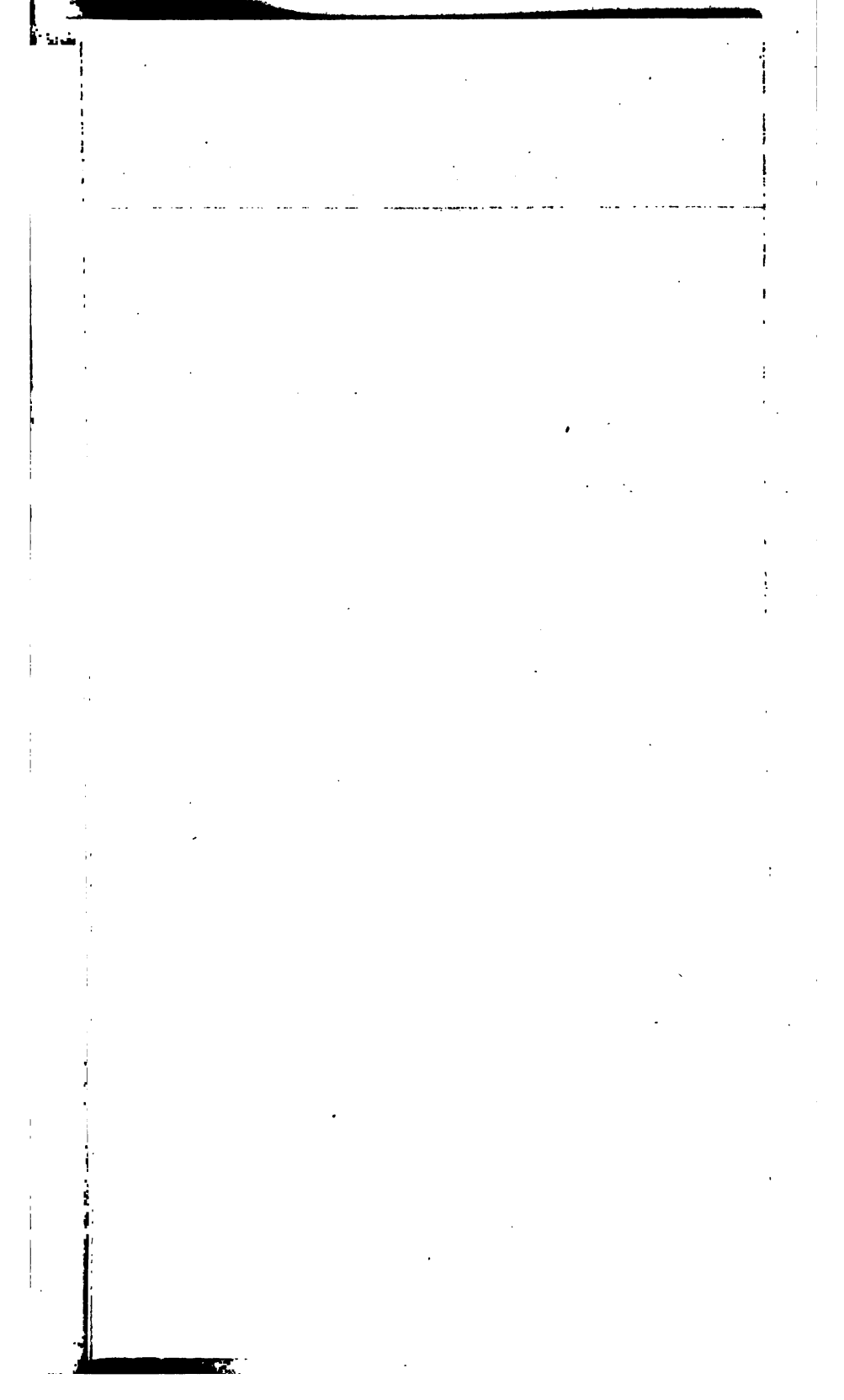


STATISTICS OF STRIKES

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Years, Industries and Localities.





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# STATISTICS OF AGRICULTURE.

Classification of Farms, Farm Products.

th Number, Acreage, Valuation of Farms and Products; also Cost of Fertilizers used.



TABLE NO. 89.

*Classification of Farms by Acreage and Tenure, by Counties, for the Years 1895-6.*

		NUMBER OF FARMS CLASSIFIED ACCORDING TO ACREAGE.							
Marginal No.	COUNTIES.	Total.	Under 10 <sup>*</sup> acres.	10 and under 20 acres.	20 and under 50 acres.	50 and under 100 acres.	100 and under 500 acres.	500 and under 1,000 acres.	1,000 acres and over.
	The State.....	73,128	2,806	3,892	12,261	19,602	31,808	1,757	702
1	Barbour.....	1,697	67	93	315	504	687	20	11
2	Berkeley.....	1,105	28	56	96	178	734	12	1
3	Boone.....	1,014	58	85	141	191	435	58	46
4	Braxton.....	1,786	38	60	284	577	783	31	13
5	Brooke.....	376	15	14	40	72	230	5	-----
6	Cabell.....	1,389	42	112	274	8:9	480	21	1
7	Calhoun.....	1,223	15	24	239	424	504	13	4
8	Clay.....	625	27	30	115	204	235	12	2
9	Doddridge.....	1,536	28	38	308	504	632	16	10
10	Fayette.....	1,479	100	90	280	435	555	17	12
11	Gilmet.....	1,233	32	48	192	408	512	29	12
12	Grant.....	628	10	9	44	104	359	62	40
13	Greenbrier.....	1,855	70	72	236	420	965	82	40
14	Hampshire.....	1,370	14	16	84	189	932	107	28
15	Hancock.....	411	23	21	53	84	220	7	-----
16	Hardy.....	642	12	17	50	86	387	59	31
17	Harrison.....	2,203	135	143	386	611	884	36	8
18	Jackson.....	2,056	32	85	360	706	844	21	8
19	Jefferson.....	643	33	23	44	77	459	5	2
20	Kanawha.....	2,445	133	222	565	674	818	22	10
21	Lewis.....	1,563	33	39	235	400	820	29	7
22	Lincoln.....	1,573	60	98	291	465	637	21	1
23	Logan.....	776	103	100	130	120	250	50	23
24	Marion.....	2,118	10	174	466	641	705	7	1
25	Marshall.....	1,677	42	76	237	450	800	11	1
26	Mason.....	1,957	54	102	391	588	755	51	16
27	Mercer.....	1,255	27	65	166	285	670	45	17
28	Mineral.....	602	12	14	52	70	370	65	19
29	Mingo.....	679	90	74	115	108	235	37	20
30	Monongahia.....	2,089	162	192	434	560	712	23	6
31	Monroe.....	1,525	60	88	254	348	697	62	16
32	Morgan.....	597	5	18	53	108	394	13	6
33	McDowell.....	593	42	29	100	138	245	21	8
34	Nicholas.....	1,469	42	52	174	434	732	32	3
35	Ohio.....	586	48	60	94	111	270	3	-----
36	Pendleton.....	1,088	49	31	92	192	592	86	46
37	Pleasants.....	787	20	48	189	260	266	2	2
38	Pocahontas.....	916	15	22	56	134	536	78	75
39	Preston.....	2,517	56	86	366	746	1,221	35	7
40	Putnam.....	1,301	45	98	230	388	515	17	8
41	Raleigh.....	1,296	34	44	203	434	545	98	4
42	Randolph.....	1,368	10	28	165	325	700	78	60
43	Ritchie.....	2,014	75	105	318	610	832	40	4
44	Roane.....	2,132	56	94	320	642	960	50	10
45	Summers.....	1,295	20	34	195	382	623	27	14
46	Taylor.....	1,035	72	73	240	270	363	13	5
47	Tucker.....	665	6	18	115	199	312	11	4
48	Tyler.....	1,434	48	53	292	442	578	20	1
49	Upshur.....	1,657	42	78	340	542	620	34	1
50	Wayne.....	2,167	190	255	384	534	760	35	9
51	Webster.....	778	6	20	89	212	420	26	5
52	Wetzel.....	1,705	32	98	382	574	600	15	4
53	Wirt.....	1,130	41	58	243	355	416	15	5
54	Wood.....	2,319	110	136	545	804	707	14	3
55	Wyoming.....	875	67	68	179	236	285	28	12

TABLE NO. 89—Continued.

Marginal Number.	COUNTIES.	CLASSIFICATION ACCORDING TO TENURE.							
		CLASS 1—CULTIVATED BY OWNERS.							
		Total.	Under 10 acres.	10 and under 20 acres.	20 and under 50 acres.	50 and under 100 acres.	100 and under 500 acres.	500 and under 1,000 acres.	1,000 acres and over.
	The State.....	60,152	1,535	2,259	9,735	17,329	27,294	1,465	555
1	Barbour.....	1,567	44	77	290	475	650	20	11
2	Berkeley.....	775	25	49	82	135	474	9	1
3	Boone.....	591	7	19	66	130	317	30	22
4	Braxton.....	1,581	17	27	213	536	720	24	10
5	Brooke.....	267	12	10	28	50	165	2	
6	Cabell.....	978	17	47	184	311	592	16	1
7	Calhoun.....	996	9	9	192	350	423	10	3
8	Clay.....	518	7	8	91	186	216	8	2
9	Doddridge.....	1,342	21	24	162	448	563	11	9
10	Fayette.....	1,115	31	53	195	336	463	13	4
11	Gilmer.....	1,049	18	23	156	356	450	22	9
12	Grant.....	549	6	9	38	97	321	51	27
13	Greenbrier.....	1,606	52	60	205	360	832	72	25
14	Hampshire.....	1,169	12	9	73	162	806	90	23
15	Hancock.....	336	17	19	42	71	181	6	
16	Hardy.....	548	10	14	43	76	328	48	29
17	Harrison.....	1,927	119	119	334	545	771	32	7
18	Jackson.....	1,751	22	55	287	622	729	19	7
19	Jefferson.....	356	32	18	34	51	216	4	1
20	Kanawha.....	1,755	57	98	155	564	666	19	7
21	Lewis.....	1,435	28	37	199	364	761	28	6
22	Lincoln.....	1,135	8	18	184	369	539	16	1
23	Loran.....	474	10	15	66	110	222	40	20
24	Marion.....	1,914	109	148	419	544	616	7	1
25	Marshall.....	1,211	31	62	178	367	592	8	1
26	Mason.....	1,637	41	61	318	500	654	37	16
27	Mercer.....	1,006	13	19	102	239	583	34	16
28	Mineral.....	489	6	11	38	59	297	53	15
29	Mingo.....	414	8	14	54	84	200	38	16
30	Monongalia.....	1,801	95	121	378	521	659	22	5
31	Monroe.....	1,338	37	71	200	311	648	53	16
32	Morgan.....	507	3	15	44	87	333	10	5
33	McDowell.....	394	14	8	60	96	197	13	6
34	Nicholas.....	1,286	17	27	150	392	606	31	3
35	Ohio.....	432	39	53	72	82	186		
36	Pendleton.....	934	14	18	74	171	534	82	41
37	Pleasants.....	622	13	31	152	205	217	2	2
38	Pocahontas.....	819	15	18	54	123	484	65	60
39	Preston.....	2,234	46	71	325	676	1,080	30	6
40	Putnam.....	1,015	16	32	168	340	439	12	8
41	Raleigh.....	1,081	18	26	164	375	473	22	3
42	Randolph.....	1,170	3	18	144	287	600	67	51
43	Ritchie.....	1,763	52	57	302	554	758	36	4
44	Roane.....	1,797	28	45	246	561	860	48	9
45	Summers.....	1,110	6	19	161	334	558	22	10
46	Taylor.....	875	66	58	183	231	322	10	5
47	Tucker.....	590	5	16	102	181	273	9	2
48	Tyler.....	1,297	28	46	258	406	521	19	1
49	Cpsbur.....	1,538	25	62	316	511	593	31	
50	Wayne.....	1,561	53	64	256	467	671	34	8
51	Webster.....	680	3	9	70	194	384	20	
52	Wetzel.....	1,391	18	37	291	495	531	14	4
53	Wirt.....	908	30	47	205	292	321	10	3
54	Wood.....	1,892	85	108	472	677	531	12	2
55	Wyoming.....	636	5	20	125	203	252	20	11

TABLE NO. 89.—Continued.

Marginal Number.	COUNTIES.	CLASSIFICATION ACCORDING TO TENURE.							
		CLASS 2—RENTED FOR FIXED MONEY VALUE.							
		Total.	Under 10 acres.	10 and under 20 acres.	20 and under 50 acres.	50 and under 100 acres.	100 and under 500 acres.	500 and under 1000 acres.	1000 acres and over.
	The State.....	4,296	398	464	842	876	1,535	119	62
1	Barbour.....	46	6	5	6	11	17	1	.....
2	Berkeley.....	52	2	1	5	6	37	1	.....
3	Boone.....	152	14	28	44	16	39	1	5
4	Braxton.....	2	1	2	7	7	8	.....	.....
5	Brooke.....	60	2	3	6	13	34	1	.....
6	Cabell.....	90	14	18	23	14	21	1	.....
7	Calhoun.....	90	2	7	23	32	25	.....	1
8	Clay.....	60	10	16	17	7	12	2	1
9	Doddridge.....	85	2	5	23	26	29	2	1
10	Fayette.....	149	24	16	34	23	38	3	1
11	Gilmer.....	35	5	5	6	7	13	3	8
12	Grant.....	29	1	1	2	9	12	.....	.....
13	Greenbrier.....	82	10	2	6	20	36	1	3
14	Hampshire.....	1	1	1	1	9	31	4	5
15	Hancock.....	30	4	2	6	5	17	5	2
16	Hardy.....	34	1	2	2	3	22	.....	.....
17	Harrison.....	165	14	16	24	45	62	3	2
18	Jackson.....	62	3	9	8	22	19	1	.....
19	Jefferson.....	52	1	1	2	1	48	.....	1
20	Kanawha.....	34	43	72	102	52	73	4	3
21	Lewis.....	119	3	2	31	28	48	1	1
22	Lincoln.....	72	9	7	13	20	19	3	.....
23	Logan.....	41	12	7	7	7	16	3	3
24	Marion.....	57	4	6	11	15	16	.....	.....
25	Marshall.....	162	9	9	29	30	81	2	.....
26	Mason.....	100	5	14	27	24	33	4	.....
27	Mercer.....	57	1	2	12	9	22	4	.....
28	Mineral.....	50	3	2	10	3	30	5	2
29	Mingo.....	35	10	6	7	5	7	.....	2
30	Monongalia.....	89	6	12	12	21	29	2	1
31	Monroe.....	51	13	10	6	6	12	1	1
32	Morgan.....	13	1	1	1	1	10	1	1
33	McDowell.....	116	15	12	20	27	35	6	.....
34	Nicholas.....	25	1	2	6	8	7	.....	.....
35	Ohio.....	114	7	5	17	22	63	2	1
36	Pendleton.....	54	12	3	5	11	17	.....	.....
37	Pleasants.....	11	1	1	6	6	4	.....	5
38	Pocahontas.....	38	1	1	1	4	19	6	1
39	Preston.....	106	2	3	17	27	42	4	.....
40	Putnam.....	132	14	24	29	25	42	3	.....
41	Raleigh.....	67	5	5	12	15	25	8	.....
42	Randolph.....	85	2	5	6	42	4	.....	5
43	Ritchie.....	85	2	8	11	24	37	1	1
44	Roane.....	82	9	12	14	18	27	1	2
45	Summers.....	84	4	8	10	29	33	1	.....
46	Taylor.....	44	6	2	16	11	11	1	.....
47	Tucker.....	38	1	4	18	11	15	.....	.....
48	Tyler.....	73	9	8	14	16	30	.....	.....
49	Upshur.....	113	22	27	19	19	25	2	1
50	Wayne.....	44	2	9	11	8	11	1	.....
51	Webster.....	106	9	80	40	17	20	.....	.....
52	Wetzel.....	8	9	3	20	20	8	.....	1
53	Wirt.....	10	5	3	14	19	31	2	1
54	Wood.....	10	18	8	17	11	15	4	.....
55	Wyoming.....	173	18	8	17	11	15	4	.....



TABLE NO 89.—Continued.

CLASSIFICATION ACCORDING TO TENURE.												
COUNTIES.		CLASS 3—RENTED FOR SHARE OF PRODUCTS.								PERCENTAGES.		
		Total.	Under 10 acres.	10 and under 20 acres.	20 and under 50 acres.	50 and under 100 acres.	100 and under 500 acres.	500 and under 1,000 acres.	1,000 acres and over.	Class 1.	Class 2.	Class 3.
Marginal Number.	The State.	8,680	440	1,182	1,699	1,703	3,003	168	85	82.25	5.87	11.86
1	Barbour.	90	16	12	19	20	22		1	90.41	2.71	5.24
2	Berkeley.	280	2	6	9	37	223	3		70.13	4.70	25.34
3	Boone.	277	35	39	33	45	82	22	21	58.24	4.99	27.33
4	Braxton.	178	20	32	33	33	55	2	3	88.52	1.45	9.96
5	Brooke.	47			5	9	32	1		71.01	15.93	12.23
6	Cabell.	223	11	48	57	34	69	5		54.76	7.06	17.30
7	Calhoun.	141	4	9	25	42	57	4		88.63	7.35	11.53
8	Clay.	46	10	8	9	10	7	2		82.73	10.40	6.40
9	Doddridge.	101	4	4	22	30	40	1		87.37	5.79	6.56
10	Fayette.	217	44	21	52	45	52	2	1	75.39	9.80	14.67
11	Gilmer.	156	9	15	31	44	50	4	3	84.26	3.24	12.65
12	Grant.	57	1	1	4	5	26	10	10	87.42	3.50	9.07
13	Greenbrier.	126	8	10	25	40	97	5	11	85.18	4.40	10.39
14	Hampshire.	149	1	5	9	17	101	13	3	85.33	3.72	10.87
15	Hancock.	40	1	2	5	8	23	1		81.75	8.27	9.73
16	Hardy.	57			5	7	37	8		85.36	5.45	8.88
17	Harrison.	115	2	8	28	22	52	2	1	87.47	7.35	9.31
18	Jackson.	243	5	20	66	62	88	2		85.16	3.01	11.81
19	Jefferson.	234		4	9	25	195	1		55.36	8.24	36.23
20	Kanawha.	340	31	52	112	60	85			71.78	14.26	13.49
21	Lewis.	27	1	1	6	10	9			91.17	7.17	1.73
22	Lincoln.	365	41	71	96	75	80	2		72.15	4.45	23.21
23	Logan.	271	100	70	58	20	20	2	1	60.95	6.06	34.92
24	Marion.	150	6	23	36	43	42			90.36	2.45	7.08
25	Marshall.	215	1	5	30	53	125	1		76.74	9.89	13.29
26	Mason.	222	6	26	47	65	68	10		83.12	5.46	11.46
27	Mercer.	215	14	46	43	37	66	7	2	72.52	3.66	16.98
28	Mineral.	67	2	1	4	8	43	7	2	79.73	9.13	11.11
29	Mingo.	205	51	62	50	17	22	2	1	60.97	5.89	30.19
30	Monongalia.	206	60	56	44	18	24	1		86.21	3.68	9.86
31	Monroe.	138	9	7	48	31	40	3		87.73	3.47	9.04
32	Morgan.	74	1	1	7	11	52	2		84.92	2.68	15.17
33	McDowell.	80	11	9	20	16	20	2	2	66.44	19.39	10.67
34	Nicholas.	157	24	22	18	33	59	1		87.54	1.63	5.29
35	Ohio.	31			4	7	20	1		73.73	19.45	8.36
36	Pendleton.	93	12	9	13	10	43	2	4	85.82	4.68	18.43
37	Pleasants.	145	5	13	32	50	45			79.03	2.28	7.31
38	Pocahontas.	67	2	4	3	7	34	7	10	89.41	3.93	7.31
39	Preston.	184	9	12	24	43	94	2		88.76	4.06	11.45
40	Putnam.	149	15	42	32	23	35	2		78.01	10.53	11.42
41	Raleigh.	148	13	15	28	44	47	1		83.41	5.01	8.84
42	Randolph.	118	6	7	17	18	59	7	4	85.05	6.22	8.67
43	Ritchie.	168	20	40	35	31	39	3		87.53	4.07	11.77
44	Roane.	251	19	36	60	62	72	1		84.26	3.94	8.03
45	Summers.	104	10	10	25	19	34	4	2	85.03	6.42	11.01
46	Taylor.	113	1	11	42	27	31	1		84.54	4.63	6.46
47	Tucker.	43	1	2	7	7	23	1	2	88.72	4.96	4.53
48	Tyler.	65	1	3	18	22	21			90.44	5.37	3.50
49	Upshur.	58	9	8	11	16	13	1		92.82	3.80	22.61
50	Wayne.	490	115	161	108	48	56	2		79.08	5.26	6.29
51	Webster.	49	1	3	8	19	26	1		87.52	5.91	12.02
52	Wetzel.	205	6	37	51	61	49	1		81.64	6.22	12.39
53	Wirt.	109	2	8	18	36	43	1	1	80.35	10.00	9.64
54	Wood.	349	19	22	61	108	139			81.59	3.44	10.73
55	Wyoming.	162	43	40	37	22	17	3		73.83	8.33	18.51

TABLE No. 90.

## Farm Products.

COUNTIES.	WHEAT.			CORN.			OATS.			BUCKWHEAT.			RYE.			POTATOES.		
	Acres.	Bushels.	Average price per bushel.	Acres.	Bushels.	Average price per bushel.	Acres.	Bushels.	Average price per bushel.	Acres.	Bus.	Average price per bushel.	Acres.	Bus.	Average price per bushel.	Acres.	Bushels.	Average price per bushel.
The State.....	316,229	3,605,975	\$ .66	593,608	16,126,183	\$ .36	203,141	3,033,628	\$ .25	14,113	125,014	\$ .40	14,541	118,167	\$ .55	26,503	1,938,106	\$ .29
Barbour.....	5,000	50,180	.65	9,973	321,994	.40	3,650	52,620	.22	350	2,800	.40	20	136	.50	450	30,150	.22
Berkeley.....	23,125	330,910	.60	19,320	565,110	.30	1,800	33,115	.25	120	1,200	.35	860	7,396	.50	515	32,160	.25
Boone.....	1,406	8,540	.65	11,500	172,500	.40	1,493	19,121	.40	20	150	.40	42	166	.50	300	21,640	.25
Braxton.....	7,569	60,635	.60	12,623	232,025	.25	1,721	16,841	.25	35	180	.25	97	237	.50	340	19,100	.35
Brooke.....	2,804	49,060	.60	4,163	37,364	.25	2,742	86,111	.25	8	89	.25	64	789	.50	460	48,162	.30
Calhoun.....	6,317	68,100	.65	15,200	375,921	.25	3,560	52,100	.22	10	50	.25	33	237	.50	850	65,180	.25
Calhoun.....	4,151	34,088	.70	8,250	213,500	.40	1,600	32,000	.30	20	105	.40	61	133	.55	290	21,120	.30
Clay.....	1,465	9,990	.75	5,320	100,123	.40	1,320	15,300	.35	14	190	.40	16	133	.55	180	12,140	.30
Doddridge.....	6,610	57,970	.65	9,765	229,065	.40	1,100	13,650	.25	25	140	.40	41	296	.45	400	33,100	.40
Fayette.....	2,575	17,900	.65	9,400	176,142	.20	6,500	85,500	.25	75	520	.40	13	127	.45	700	30,360	.25
Galmer.....	5,340	38,139	.70	6,298	120,228	.35	820	35,340	.25	25	130	.35	16	89	.45	420	28,500	.25
Grant.....	4,153	38,139	.70	6,298	120,228	.35	820	35,340	.25	25	130	.35	16	89	.45	420	28,500	.25
Greenbrier.....	8,046	100,130	.65	13,500	337,500	.35	8,700	163,000	.20	220	2,000	.35	390	2,763	.50	376	32,130	.20
Hampshire.....	8,614	79,900	.60	11,800	210,250	.30	5,610	80,120	.20	370	1,605	.35	3,366	29,969	.40	576	32,510	.17
Hancock.....	2,350	31,155	.65	2,569	95,122	.30	3,100	75,000	.22	55	520	.30	8,336	1,116	.45	430	32,000	.25
Hardy.....	3,807	37,100	.75	7,150	175,535	.35	2,300	32,060	.22	690	4,860	.35	1,614	12,276	.60	180	10,700	.25
Harrison.....	10,821	106,125	.65	13,425	475,289	.35	3,600	65,000	.22	12	95	.35	86	764	.55	590	50,169	.25
Jackson.....	11,520	106,125	.65	17,700	501,121	.35	3,900	55,000	.22	5	580	.40	89	659	.50	900	98,000	.30
Jefferson.....	28,000	413,601	.65	18,350	610,560	.30	600	13,000	.20	5	60	.40	315	2,738	.60	248	20,150	.25
Kanawha.....	9,601	84,000	.65	24,622	855,710	.30	8,100	95,050	.20	10	120	.40	40	333	.60	1,172	67,684	.30
Kanawha.....	7,210	69,111	.65	10,500	307,111	.25	1,500	20,010	.25	32	330	.35	12	108	.60	442	36,160	.30
Lewis.....	4,637	33,000	.75	17,225	340,116	.35	3,200	38,000	.25	.....	.....	.....	14	75	.65	226	15,208	.25
Logan.....	203	13,000	.65	10,000	250,156	.40	1,420	15,300	.25	.....	.....	.....	11	44	.70	426	23,110	.25
Marion.....	9,194	94,000	.75	10,665	315,347	.35	4,200	78,650	.30	100	780	.35	12	156	.60	250	26,000	.35
Marshall.....	14,890	202,496	.65	17,100	518,850	.25	10,125	290,300	.20	30	290	.25	232	2,684	.40	1,200	99,897	.25
Mason.....	14,100	155,400	.65	21,635	750,182	.25	4,150	66,125	.18	35	350	.25	270	2,846	.55	1,100	98,010	.25
Mercer.....	6,000	42,000	.75	9,620	180,104	.50	4,800	62,005	.30	150	1,200	.60	290	1,791	.60	250	18,000	.40

TABLE NO. 90—Continued.

COUNTIES.	WHEAT.		CORN.		OATS.		BUCKWHEAT.		RYE.		POTATOES.	
	Acres.	Bushels. Average price per bushel.	Acres.	Bushels. Average price per bushel.	Acres.	Bushels. Average price per bushel.	Acres.	Bush. Average price per bushel.	Acres.	Bush. Average price per bushel.	Acres.	Bushels. Average price per bushel.
Mineral.....	3,439	31,600 65	4,465	96,462 30	2,725	43,120 25	500	3,900 30	520	3,581 60	350	22,120 22
Mingo.....	105	625 66	6,000	195,000 34	800	10,000 25	.....	..... 35	6	23 55	112	7,410 29
Monongalia.....	8,600	95,000 75	12,109	415,841 35	5,770	104,015 25	140	1,150 34	15	130 65	440	30,540 30
Monroe.....	106,000	70,000 70	4,555	311,611 40	4,500	73,030 23	145	1,200 35	125	1,911 55	210	14,010 30
Morgan.....	4,297	40,042 65	6,210	130,145 45	1,540	22,330 25	680	3,140 40	2,266	15,784 60	248	16,890 25
McDowell.....	119	804 80	5,275	105,580 45	1,800	15,020 35	5	..... 45	102	517 65	200	10,150 40
Nicholas.....	3,400	20,000 75	9,575	195,160 45	3,680	45,000 35	75	480 35	250	1,825 65	540	22,004 40
Ohio.....	3,799	60,400 65	5,820	205,000 35	4,000	122,020 20	100	95 55	71	943 35	640	63,140 35
Pendleton.....	6,000	50,000 75	7,350	165,525 40	2,050	30,900 25	900	9,100 50	1,057	9,138 55	235	23,050 20
Pleasants.....	3,834	32,138 70	6,150	175,247 35	3,840	13,070 25	40	..... 25	63	731 60	475	35,840 25
Pocahontas.....	3,430	38,138 75	4,550	130,247 55	3,340	60,600 30	650	5,270 40	236	2,070 60	273	18,120 40
Preston.....	4,700	43,000 65	8,660	240,181 50	11,400	214,070 25	4,900	53,100 50	250	1,860 50	610	46,030 25
Putnam.....	6,500	61,400 75	12,912	335,539 25	3,900	54,125 30	10	..... 50	12	40 60	580	40,650 25
Raleigh.....	4,000	28,100 75	9,109	181,113 50	5,100	62,001 30	320	3,000 30	215	1,500 65	380	28,260 25
Randolph.....	2,000	25,278 70	6,680	179,131 50	3,250	52,230 25	340	3,101 35	96	690 60	450	30,010 20
Ritchie.....	4,812	37,024 70	12,651	350,121 30	2,203	35,000 25	651	430 55	100	800 60	750	50,300 30
Roane.....	11,000	77,000 75	18,440	450,154 35	2,560	37,140 30	214	120 30	40	300 60	670	40,212 30
Summers.....	4,300	42,131 70	8,562	180,210 35	3,000	57,135 25	70	..... 45	75	500 60	325	22,450 35
Taylor.....	3,891	40,011 70	4,408	121,110 30	2,000	38,115 20	30	..... 45	26	175 60	320	28,135 25
Tucker.....	7,586	5,012 75	3,336	85,815 35	1,680	27,115 25	870	3,701 45	14	94 65	170	9,860 40
Tyler.....	7,300	75,000 70	10,120	300,101 35	2,310	35,150 25	25	..... 35	86	235 60	600	50,100 35
Upshur.....	4,300	42,703 70	8,910	235,333 40	3,334	42,160 30	210	1,500 40	260	140 60	260	22,120 30
Wayne.....	6,520	72,000 70	30,099	950,101 25	5,280	54,020 25	15	125 25	75	436 50	865	58,075 40
Webster.....	973	6,546 75	4,460	90,312 30	1,300	13,145 30	35	..... 40	40	290 60	175	9,720 45
Wetzel.....	10,300	120,000 70	16,095	510,969 30	4,890	94,180 20	60	680 30	80	790 60	890	68,630 27
Wirt.....	5,143	44,957 70	8,560	196,733 30	17,115	29,800 20	25	145 30	25	200 60	560	33,720 30
Wood.....	13,200	142,095 70	16,730	600,127 30	4,240	70,820 20	21	230 30	140	1,230 60	1,214	9,242 30
Wyoming.....	970	5,750 75	8,719	183,119 40	2,900	26,150 30	361	2,151 40	170	750 65	250	16,344 35

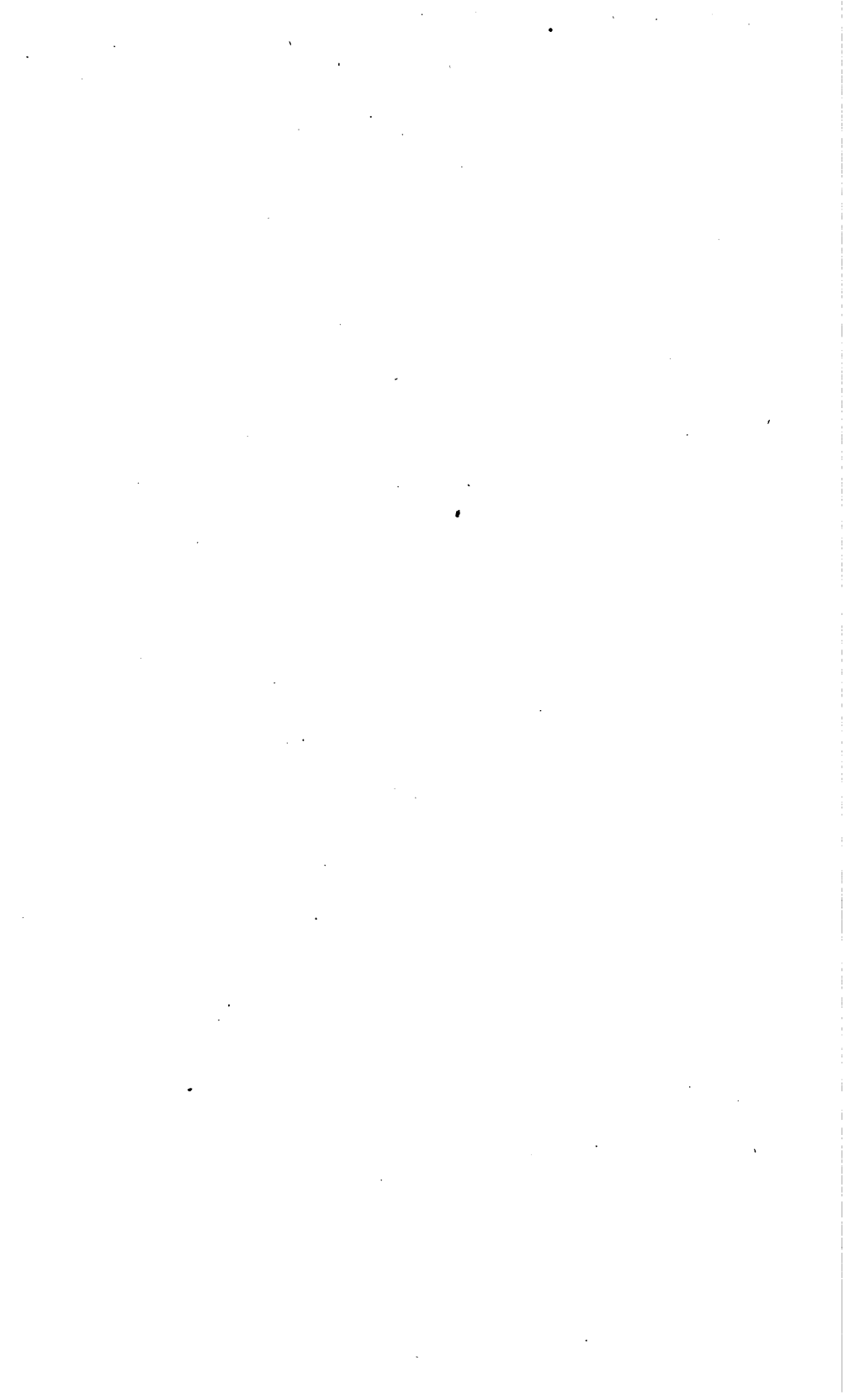
TABLE NO. 91.

*Number, Acreage, and Valuation of Farms and Products with Cost of Fertilizers by Counties.*

Marginal Number.	COUNTIES.	Total number of farms.	ACRES IN FARMS.				VALUATION.				Estimated value of farm products, 1896.	Estimated cost of fertilizers purchased in 1896.	Marginal Number.
			Total.	Improved.	Unimproved.	Land, fences and buildings.	Implements and machinery.	Live stock.					
	The State	73,128	10,321,826	4,554,000	5,767,826	\$ 155,635,801	\$ 3,245,420	\$ 17,254,575	\$ 14,717,866	\$ 414,529			
1	Barbour	1,697	190,559	132,516	58,043	3,450,480	59,650	495,215	293,211	12,610	1		
2	Berkeley	1,105	164,448	124,583	39,865	4,653,960	132,480	417,888	499,508	75,000	2		
3	Boone	1,014	251,422	28,998	201,424	1,100,570	26,350	136,253	182,218	1,800	3		
4	Braxton	1,786	228,860	82,393	146,467	2,120,090	30,530	289,599	232,323	2,000	4		
5	Brooke	376	54,580	44,582	9,998	2,501,810	65,170	185,005	236,479	2,000	5		
6	Cabell	1,289	131,126	62,090	69,036	1,875,420	51,800	197,079	296,900	2,000	6		
7	Calhoun	1,223	133,608	47,964	85,644	1,311,030	23,190	179,511	172,577	500	7		
8	Clay	625	66,148	19,541	46,607	455,130	8,120	83,009	69,156	1,400	8		
9	Doddridge	1,536	191,401	92,894	98,507	2,490,510	41,350	327,917	262,232	1,400	9		
10	Fayette	1,479	225,418	54,317	171,101	2,167,510	42,600	214,640	218,703	20,000	10		
11	Gilmer	1,233	166,630	70,918	93,707	2,075,780	31,930	252,065	210,924	300	11		
12	Grant	628	209,906	70,742	139,164	2,150,920	34,190	309,701	119,117	2,000	12		
13	Greenbrier	1,885	380,534	188,844	241,692	4,400,750	95,350	539,338	383,679	25,150	13		
14	Hampshire	1,370	312,662	129,369	213,293	2,440,110	95,200	351,137	307,285	24,244	14		
15	Hancock	411	47,735	36,271	11,461	2,280,150	54,320	158,364	200,585	6,900	15		
16	Hardy	642	195,039	63,172	131,867	1,897,870	4,350	256,011	122,444	5,300	16		
17	Harrison	2,203	254,388	206,423	48,965	7,577,660	125,170	975,600	507,276	15,145	17		
18	Jackson	2,056	235,930	132,668	103,263	3,785,440	85,630	416,938	392,954	31,400	18		
19	Jefferson	648	109,461	91,445	18,016	4,400,200	120,330	361,400	530,114	90,115	19		
20	Kanawha	2,445	296,900	100,540	196,360	4,515,740	70,140	345,939	304,476	2,000	20		
21	Lewis	1,563	225,203	142,936	182,263	4,508,570	85,410	531,598	413,338	3,130	21		
22	Lincoln	1,573	161,489	50,195	111,291	970,780	31,230	190,289	205,873	2,018	22		
23	Logan	776	170,361	20,000	150,361	2,213,800	9,650	149,377	171,951	150	23		
24	Marion	2,118	180,291	45,210	135,081	5,494,390	93,780	474,934	351,252	6,200	24		
25	Marshall	1,617	180,252	123,813	56,439	6,895,180	160,170	566,230	654,704	1,500	25		
26	Mason	1,957	250,326	116,328	103,993	4,731,170	101,000	423,987	402,293	9,175	26		
27	Mercer	1,265	214,502	65,107	149,395	1,996,770	34,290	223,432	188,302	6,140	27		

**TABLE NO. 91. — Continued.**

Marginal Numbers	COUNTIES.	ACRES IN FARMS.			VALUATION.			Estimated value of farm products, 1896.	Estimated cost of fertilizers, purchased in 1896.	Marginal Numbers
		Total.	Improved.	Unimproved.	Land, fences and buildings.	Implements and machinery.	Live stock.			
28	Mineral	164,334	58,061	106,273	1,955,720	43,110	221,192	148,155	4,195.28	28
29	Mingo	158,588	17,588	141,000	1,000,000	9,000	74,688	85,076	62.39	29
30	Monongalia	291,543	152,356	139,186	2,791,530	103,330	566,000	367,130	6,771.80	30
31	Monroe	245,946	134,002	111,944	3,766,230	90,280	483,938	232,239	10,771.31	31
32	Morgan	104,651	44,847	59,804	816,930	41,720	104,660	123,850	12,340.32	32
33	McDowell	103,932	14,301	89,631	1,061,454	10,570	81,124	86,944	300.33	33
34	Nicholas	187,112	64,150	122,962	1,479,355	32,410	256,745	189,374	1,126.34	34
35	Ohio	59,365	58,838	9,527	4,509,740	96,250	275,386	370,671	9,936.35	35
36	Pendleton	341,639	90,498	250,133	2,337,310	52,180	339,530	1,997,693	2,531.36	36
37	Piassas	72,200	42,694	29,506	1,511,260	49,410	140,993	1,060,229	965.37	37
38	Pocahontas	319,145	74,260	244,885	2,476,340	55,770	320,300	193,500	3,510.38	38
39	Preston	313,343	146,011	167,332	4,318,590	128,530	582,228	4,063,663	12,120.39	39
40	Putnam	150,163	72,754	77,409	2,076,190	58,320	226,152	277,373	2,120.40	40
41	Raleigh	149,683	90,327	59,356	1,454,530	33,980	217,937	193,464	1,135.41	41
42	Randolph	450,181	89,220	360,961	4,312,940	58,884	385,984	2,055,204	5,840.42	42
43	Ritchie	230,935	117,819	113,116	3,518,140	55,230	412,769	359,252	5,800.43	43
44	Roane	263,291	123,310	139,981	2,707,207	65,740	456,391	396,417	9,910.44	44
45	Summers	183,454	60,435	123,019	1,411,310	40,901	193,473	4,295.45	4,295.45	45
46	Taylor	105,805	76,778	29,027	2,629,900	43,250	377,908	198,246	6,420.46	46
47	Tucker	84,917	28,415	56,504	912,210	19,430	103,147	596.47	596.47	47
48	Tyler	138,681	103,836	34,845	2,982,930	55,580	333,720	335,657	3,441.48	48
49	Upshur	170,257	103,618	66,639	3,123,770	55,640	123,651	210,694	2,691.49	49
50	Wayne	225,941	90,837	135,104	2,226,750	45,940	330,034	321,200	470.50	50
51	Webster	104,659	24,075	80,584	856,740	16,150	111,516	86,014	325.51	51
52	Wetzel	161,549	91,874	69,675	3,398,190	75,230	380,982	406,069	244.52	52
53	Wirt	130,586	63,844	66,738	1,966,240	34,060	178,432	149,120	275.53	53
54	Wood	196,749	30,223	166,526	4,961,490	114,510	477,768	472,990	7,185.54	54
55	Wyoming	119,523	36,631	82,894	994,440	12,030	123,603	166,810	446.55	55



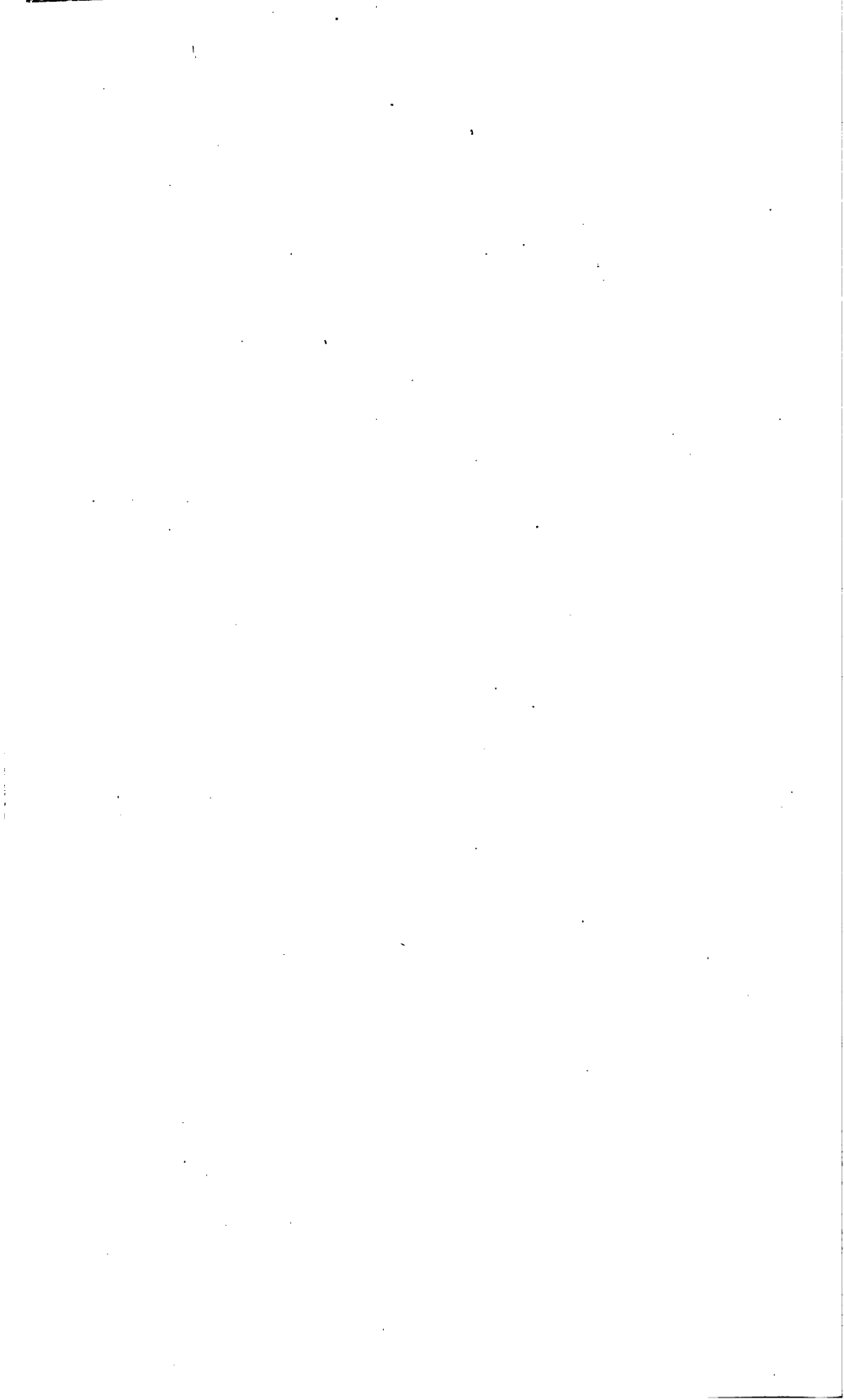
REPORT  
OF THE  
COMMISSIONER OF LABOR,  
OF THE  
STATE OF WEST VIRGINIA.

1897—1898.

*I. V. BARTON,*  
*COMMISSIONER.*



CHARLESTON:  
WILL E. FORSYTH, PUBLIC PRINTER.  
1898.





*Albert R. [unclear]*

REPORT

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COMMISSIONER OF LABOR,

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STATE OF WEST VIRGINIA.

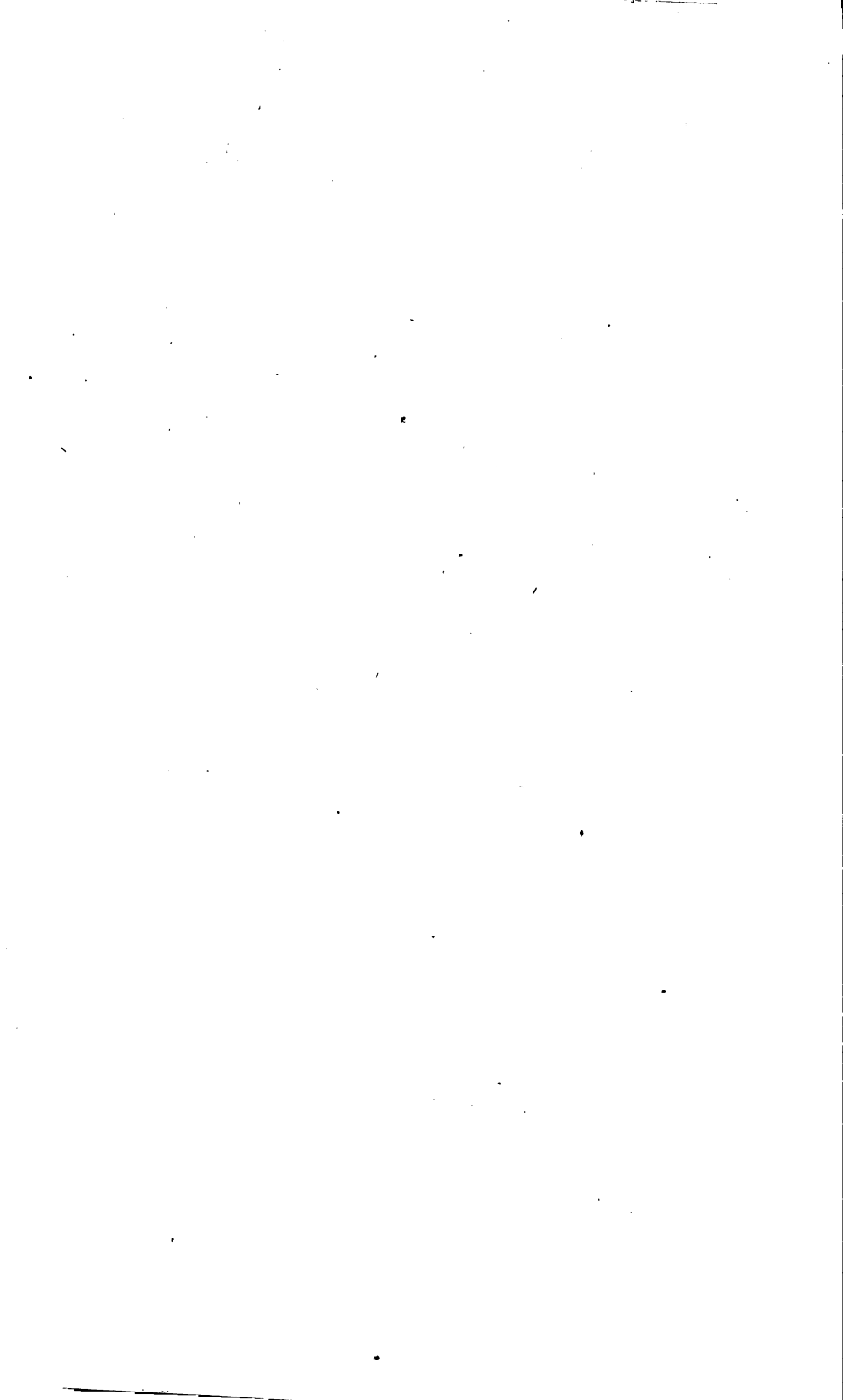
1897-1898.

I. V. BARTON,

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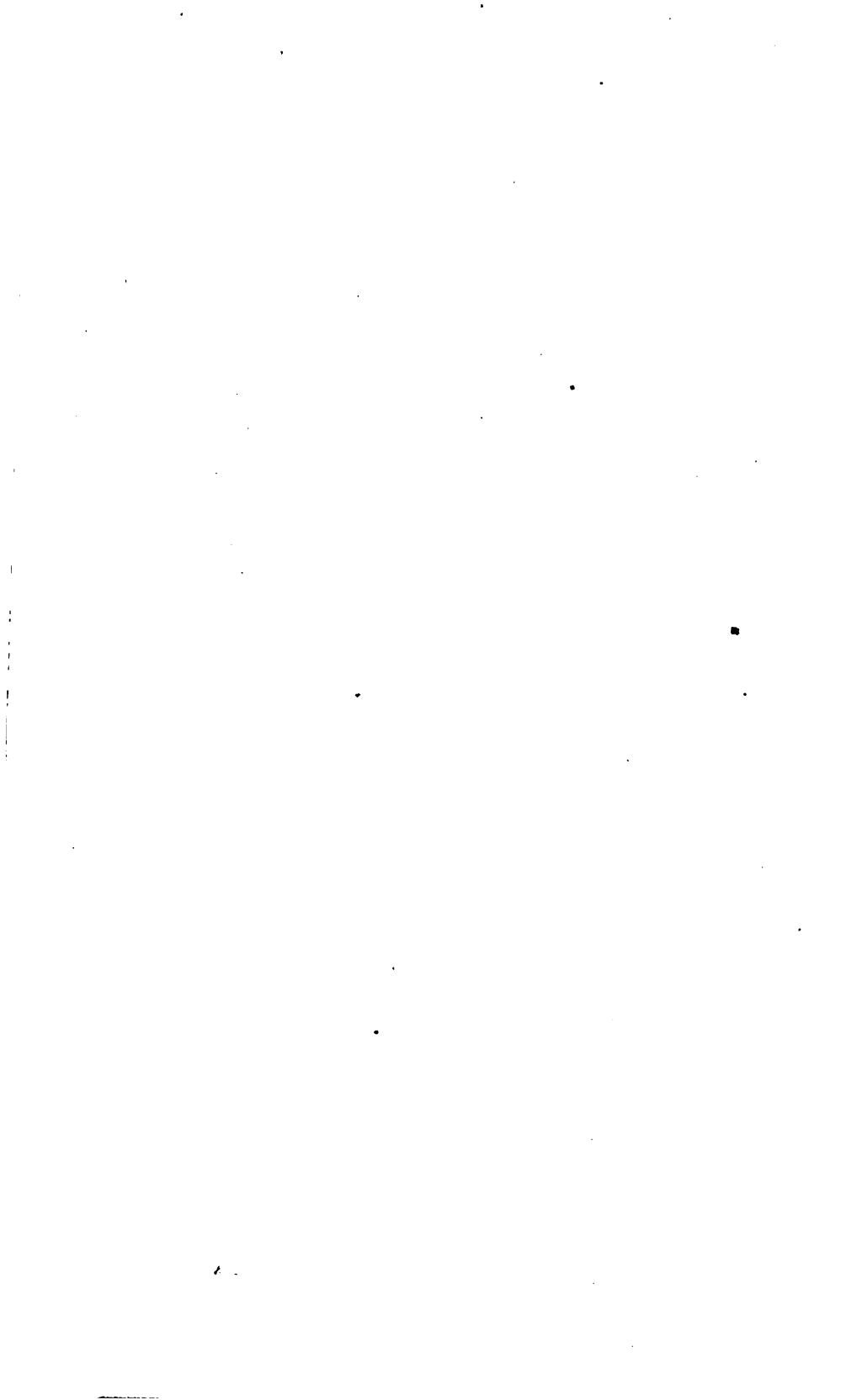
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## LETTER OF TRANSMITTAL.

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STATE OF WEST VIRGINIA,

OFFICE OF COMMISSIONER OF LABOR.

WHEELING, W. VA., JUNE 1, 1898.

*To His Excellency, G. W. ATKINSON, .*  
*Governor of West Virginia.*

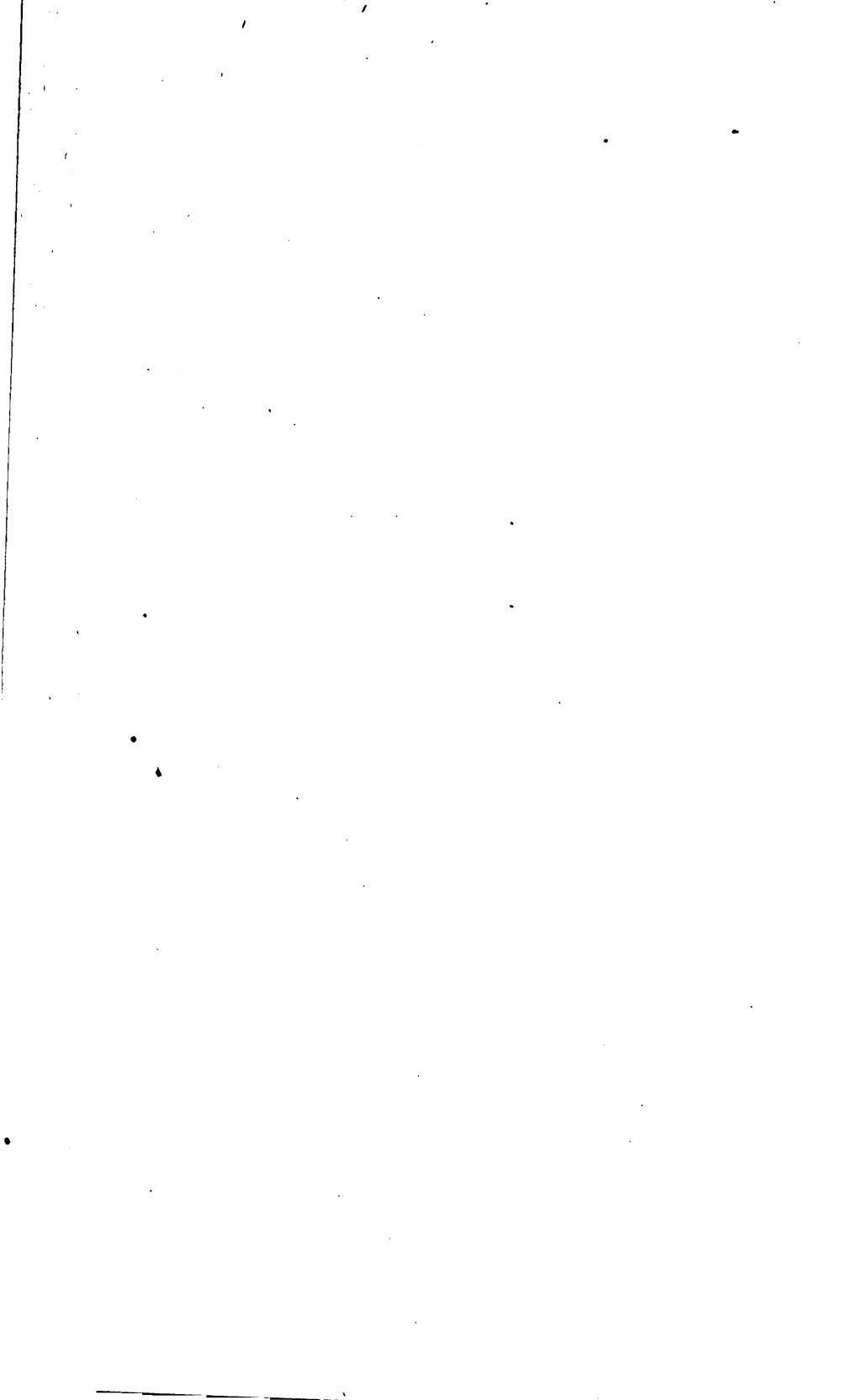
SIR :—

I have the honor to transmit, herewith, the report of this department for the years 1897 and 1898.

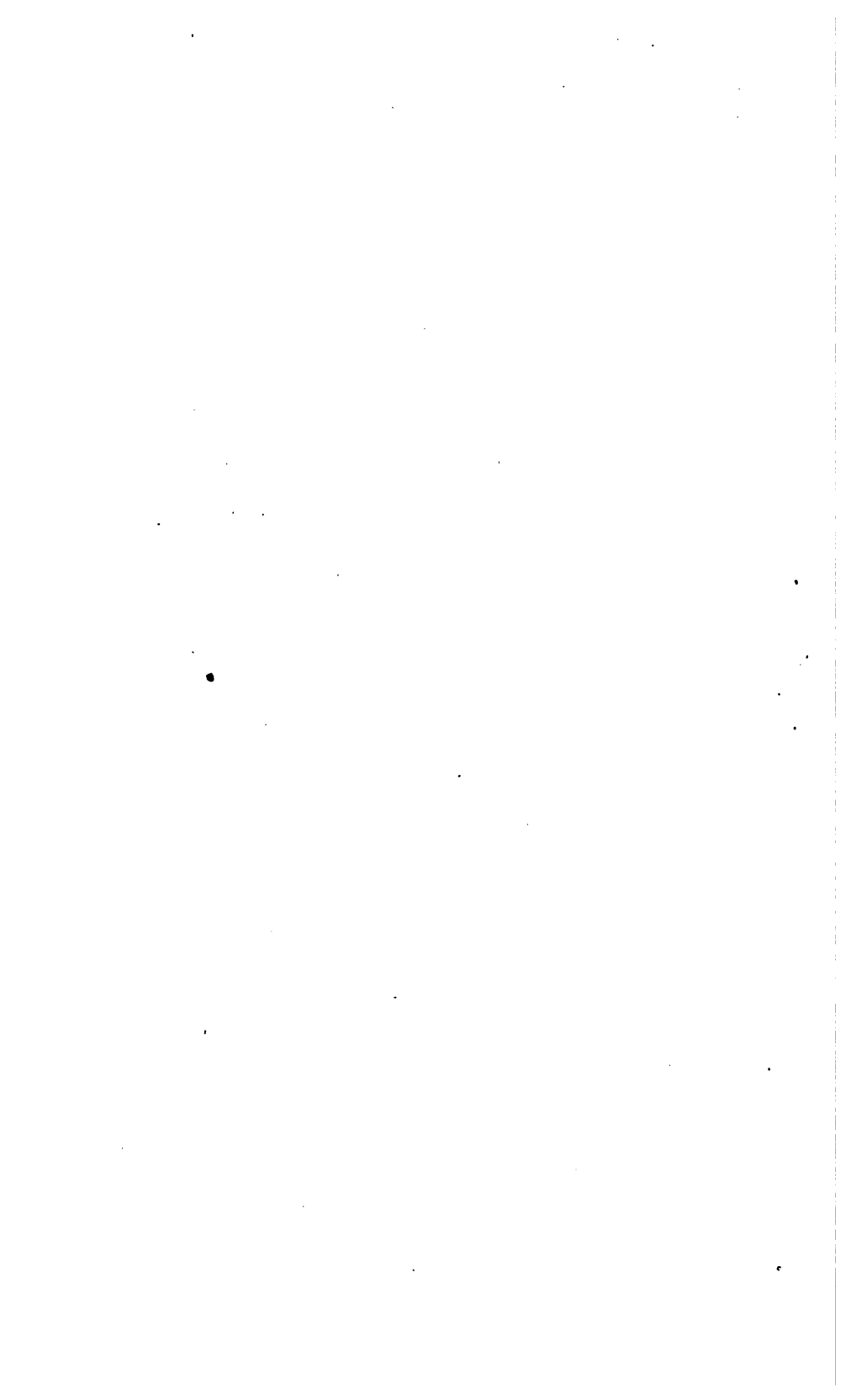
Very respectfully,

I. V. BARTON,

Commissioner of Labor.



## **INTRODUCTION.**





# INTRODUCTION.

---

This report is divided into five parts: Part I, Condition of Manufactures, shows by industries number employed, January 1, 1897, and January 1, 1898, with per cent. of increase or decrease, average daily hours of labor, number of weeks in operation during 1897 and change in wage rates during the year, in 500 manufacturing establishments in the State:

Part II, Strike of Bituminous Coal Miners, 1897, shows the effect and extent of the strike in West Virginia, giving number of miners employed, number out during strike, number who have resumed work January 1, 1898, number who have resumed work at advanced rate and number who have resumed work at union wage scale, by counties and by mining districts and number of miners in West Virginia, reported organized January 1, 1898, number reported organized prior to strike, number organized miners reported unemployed, January 1, 1898, number Local Unions, United Mine Workers of America, prior to strike, and number Local Unions, United Mine Workers of America, reported January 1, 1898:

Part III, Resources and Advantages of West Virginia, gives general resources, water, fuel, labor and railroad advantages, the principal crops, cost of land and social and educational advantages of the fifty-five counties of the State:

Part IV, Factory Inspection, shows the extent of factory inspection in the United States, recommends further provision for the inspection of factories and workshops in the State and the appointment of a factory inspector and shows industrial establishments inspected during 1897:

Part V, Labor Laws of West Virginia, gives laws relating to labor, compiled from the Code of 1891 and subsequent Acts of the Legislature.

The work of this department has been greatly hampered by the inadequate appropriation for contingent expenses.

I would earnestly recommend that the appropriation for contingent expenses be increased to at least \$1,000 per year.

Statement of expenditures for twelve months ending June 1, 1898, given on last page, shows appropriation for the years 1897-1898, to be exhausted in the first year's work.

In addition to the recommendation submitted in the Report of Factory Inspection, Part IV, that a law be passed making efficient provision for the inspection of factories and workshops and providing for the appointment of a factory inspector, I would further recommend that the law regulating the employment of children be amended to read:

No child under fourteen years of age shall be employed in any mine, or in any factory or manufacturing establishment within this State.

No child under the age of sixteen years shall be employed by any person, firm or corporation, at employment whereby its life or limb is endangered or its health is likely to be injured or its morals depraved by such employment.

A sworn statement of the age of all minors under sixteen years of age shall be obtained and kept by employers, which statement shall be produced for inspection on demand.

Further relative to the proposed law for a more efficient system of factory and workshop inspection:

That seats be provided for female employees, in mercantile, and manufacturing establishments, for their use when not actively engaged and that the prosecuting attorney of any county be authorized upon the complaint on oath of the Commissioner of Labor or factory inspector, to prosecute before any court of competent jurisdiction in the name of the people of the State, actions against any person or persons violating the provisions of this act.

#### THE PURPOSE OF THE BUREAU OF LABOR.

At the thirteenth annual convention of the National Association of Officials of Bureaus of Labor Statistics, held at Nashville, Tenn., May 19-21, 1897, President Carroll D. Wright, in an interesting address on this subject, said in part:

"The question is often asked and we have answered it every year: What is the purpose of this chain of offices, reaching from Maine to California and now numbering thirty-three in all, with

a Federal Department of Labor, whose general purposes and motives are the same as those which actuate the State offices?"

The impression generally prevails among those who have not come in close contact with the results of the work of these bureaus, that they are in some way connected with various propaganda or with labor agitation, that their purpose is to secure certain things in the way of legislative concessions to labor or to help make attacks upon capital.

Nothing is farther from the truth than this impression.

Our bureaus belong to the educational functions of the State. We have nothing to do with solutions, except in so far as facts properly and honestly collected and accurately and scientifically analyzed and published may help in the solution of some of the difficult problems which confront us everywhere in these closing years of the nineteenth century. The labor question occupies a different position each succeeding decade or generation. What it may have been does not indicate what it is now. Formerly the labor question was a very narrow one, and consisted simply in the proposition, How can wages be raised and the working hours per day reduced? And the demand of the wage worker in former times was for an increase of wages or a decrease in the hours of labor, or both, with a view of elevating his standard of life. You should remember that when this demand was first made wages were paid in accordance with David Ricardo's old and well known "iron law of wages," under which the rate of wages was fixed at a point which simply covered absolute physical necessities of a man, his clothing, his food, and his shelter. This was much to be granted for day labor, simply that the physical machine, the working anatomy, should not depreciate in value; but in the last generation or two there has come something beyond this which means more than the mere physical wants of man, and this something else relates to the workingman's interest in society, how he can receive wages enough to enable him to become what he has been made everywhere, a political, a social, and a moral factor in the community. He now receives wages from 10 to 15 per cent. margin above the rate which the "iron law of wages" would fix as his compensation for so much labor rendered. The extra demand for some of the elevating and spiritualizing influences of life lies at the bottom of the labor question today; and so it means sociology as a whole, the science of society—how can society grow; and grow in the very best way, so that all men shall receive something of the things in this life which mean culture, education—art, even.

This demand wherever you meet it is evidence by what we call "social unrest," and it is the function of these offices which we represent to contribute facts, and facts only, which shall help us to understand the meaning of this social unrest and enable us to determine, if possible, whether there shall be any danger in it, or whether the social unrest means something that shall carry civilization still farther up in the advance of the times. Then what is

the labor question concretely stated? The underlying factors of the labor question had their origin so long ago, that history gives no account of them, as far back as when a certain tribe lived on the table lands of Central Asia, away back of the historic period, and so far back that all we know of it comes from the Sanscrit. This tribe grew refined; it became intelligent; it built boats, and steered them in the streams with a rudder, and propelled them with oars as we do today; it wove cloth; it did many things that indicated a higher sense of true civilization; and then, gentlemen, commenced that great fever of unrest, which has followed the Aryan race to this moment, and will follow it until the end, whenever that may be, thousands or millions of years hence, and it is to this unrest that our Western Hemisphere owes its existence as a populated land. As soon as his tribe, that grew somewhat refined, found itself in that position, the ambition seized its members and a portion of the old tribe came down from the table lands of Central Asia and found itself wandering westward. Other sections came down behind them and pushed on those that were in advance, and they crossed the eastern waters and settled the Hellenic States. They made Central Europe what it is, and, finally, crossed the English Channel and settled Great Britain, and soon they found themselves fretting on the outmost western rock of the Irish coast, with just as much unrest in their souls as they ever had during the centuries back of them, and they peered into the western ocean and finally one of their number, one day in October, in 1492, found himself still peering from the deck of his battered caravel into the west, and this great continent was discovered. More of his tribe kept sweeping on and sweeping on, settling a fringe all along the Atlantic coast, crossing the rivers, and finding themselves at last beyond the Mississippi, until now the sons of this old, ambitious Aryan race are fretting on the outmost coast of this country. Whether or not they will in time sweep over the Pacific and reach again the table lands of Central Asia is a great question in sociology, but my reason for referring to this fact is to show you that the unrest which made this country what it is, is of the remotest origin, and we Americans find in our veins today the very life blood which made those characters thousands of years ago distinctive, and this unrest has followed us, and is following us, and we are feeling it in accessions as the generations pile up in the passage of time.

This, gentlemen, concretely, is the 'labor question of today. What shall be done with this unrest; how shall it be shaped; not whether it can be killed, but whether the struggle under it can be softened, can be guided, can be moulded into some force which shall mean the very best for human conditions. So, when we speak of the labor question in the narrow sense it is because we do not comprehend it; but what our bureaus mean when they use the term "labor question" is the physical, the moral, and the social condition of the great bulk of the people that make the world go after all. Therefore, when we contribute facts, when we investi-

gate conditions, we are simply contributing something to help legislators, to help philosophers, economists, writers, and students everywhere to know better how to soften these conditions, and how to help the common man to a higher and more elevated standard of living. Not to solve problems, because no one of them can be solved; there is no complete solution of the labor question in all its phases, and when a body of men find a solution for all of the existing problems of today I want to assure you that immediately after you will witness the death of industry and a stagnation of the community at large. There is a great deal of talk about unrest, about discontent, and there are several kinds of discontent which prevail; but the discontent that is legitimate is that which impels men, always and ever, to seek better conditions. That is what has brought millions across the stormy ocean to settle in this land; that is what has made the United States what it is; that is what is building the South into a great industrial empire. Now, as facts are collected, classified, and systemized, we find that out of them all, which means the knowledge of conditions as they are, there is growing a new political economy, which Henry D. Lloyd has defined. I will use his words:

"There is a new political economy, which looks first to the care and culture of men. There is a new struggle for life, the life of others. There is a new science which finds man in the same womb with the fish, the dog, the serpent, the bird, and traces his lineage back to brotherhood with the humblest life of the planet. There is a new self-interest of the individual who puts his family before himself, his country before his family, mankind before his country, because there is filtering into his consciousness the vast fact that his share of what is done for him by mankind is of far more value to him than what he does for himself. There is a new self-interest of the community which is going into the slums, factories, mines, sewers, to make all safe by making its weakest safe. There is a new state, the organized body of Christ, which feeds the hungry, heals the sick, and visits those in prison, and gathers up the children. There is a new religion,—a religion of progress, and of man as a partner in the creation of that progress, creating new ideas, new species of plants and animals, new men and new society. Mankind prays to the 'All-Perfect Father,' but as it utters the words the indomitable within whispers that if God should stop at perfection man would pass Him by."

There is a new political economy, then, and the facts which we are helping to collect are assisting in its creation. This new political economy seeks the co-ordination of ethical forces and economical forces. Now you see how difficult it is, if I am right in this position, to solve any problem. Our bureaus contribute the facts which show all there is in arbitration, and yet we all recognize that industrial arbitration is not a solution of the great labor problem itself, as has been contended. We contribute facts to show the relation of the alcoholic liquor traffic to crime, insanity, and pauperism, but we know well that the economic complications

of this traffic cannot be removed at the present time. We know that however desirable it may be, that temperance principles should prevail, there are great economic difficulties in the way, one of which is that should you wipe alcohol from the face of the earth, you would turn 90,000,000 bushels of corn back on the farmer, throw millions out of employment, and destroy the activity of a billion dollars of capital. Can such a state of affairs be brought about instantaneously by legislation or any other process and not disturb the whole industrial equilibrium of the country? Our bureaus show the facts relating to the employers' liability; they do not argue, but they show conditions, and thus our legislators are able to discuss with intelligence such a problem as that of employers' liability when it comes up.

There are many other features to which we contribute, but we know they are not solutions. A legislature cannot solve economic problems, any more than can the voluntary remedies which are projected, such as an increase in wages, establishment of a system of profit sharing, co-operation, socialism, nationalism, or the ever present single tax. We all know that these are phases and not complete solutions. We know, says John Stewart Mill, that there is no one thing that can be done, which, when done, will relieve the world of all the incongruities, misery, and unhappiness that exist. We know that these things need study and co-ordination, and it is only through the collection of facts, from bottom conditions, that these things can be of any service. The co-ordination of vital principles of competition and social service, the old economic man of Ricardo, the social man of today—a man who must believe and know that to meet success he must render the very best service that is in him to his community, and that it is the community's duty to render the very best service to the individual.

These bureaus are not socialistic, either. They do not preach the doctrine of socialism, even, as is sometimes the case, when the heads of the office may be socialistic in their tendencies. They know the difference between revolutionary socialism and constructive socialism. They know the iniquity and immorality, even, of granting equal compensation for unequal service. They recognize on the other hand, however, all the vitality that there is in socialism, and that vitality consists in its being a criticism, not a philosophy nor a system. We know well that only in the character of the men is to be found the solution of any problem. We know that in the elevation and the broadening of the individual is to be found the very best social system and the very best social standards. Now, with these aims before it, this body of men meets annually for the purpose of discussing methods of how to reach these facts, which are so important in the consideration of the vexed questions of the day so far as they relate in any way to industry. If industry does not flourish and is not healthy, the community itself must suffer, for all society wherever it exists is dependent upon a vigorous condition of industry. We need not, therefore, advance any particular theory or advocate any particu-

lar solution, but simply content ourselves with going forward on the lines which have been laid out by our respective legislatures, which point out our simple duty of collecting facts and fearlessly publishing them, whether they affect our own individual theories or the theories of the party which may be in power at the time. It is only in this way that we can help the nation and help the State and constitute as time goes on the true remedy which lies in the practical application of some of the simplest rules of that great body of principles known as Christianity. This may sound very much like a platitude, but if there be any other way, no philosopher or economist has yet discovered it.

So, to provide solutions, and to give mankind a better standard of living, the attack must be made all along the line and not at any one point. Dr. William T. Harris, the Commissioner of Education, has defined a crank. He says a crank is a man who sees something very clearly, but not in its relations; and it is so in the attempts to solve phases of the labor problem. One man sees a thing very clearly; he sees that the temperance question involves the happiness and economic conditions of men, and he thinks that if temperance principles could only prevail the world would be happy. Another man ignores that and says, "If you can only establish industrial arbitration you will settle all your difficulties." Another man thinks that the eight-hour day would solve the problem and remove all difficulties attending to industrial conditions. All these things are good, but they must be considered together in their relations one to the other, or else you are simply setting up bricks to be knocked down. Our duty, then, whether as Commissioners of Labor, or in whatever capacity we may serve, is to help contribute to the sum of knowledge which shall ultimately soften this struggle without attempting to remove that divine discontent which makes the world what it is, and which gives us whatever civilization now exists.

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Following is a list of Bureaus of Labor Statistics in the United States, with date of establishment and name and address of executive officers in charge:

United States Department of Labor—Established as Bureau of Labor, January 31, 1885; made a Department of Labor June 13, 1888. Annual reports. Commissioner of Labor, Carroll D. Wright, Washington, D. C.

Massachusetts Bureau of Statistics of Labor—Established June 23, 1869. Annual reports. Chief of the Bureau of Statistics of Labor, Horace G. Wadlin, Boston, Mass.

Pennsylvania Bureau of Industrial Statistics—Established April 12, 1872. Annual reports. Chief of Bureau of Industrial Statistics, James M. Clark, Harrisburg, Pa.

Connecticut Bureau of Labor Statistics—Established July 12, 1873. Abolished July 23, 1875. Re-established April 23, 1885. Annual reports. Commissioner of Labor, Samuel B. Horne, Hartford, Conn.

Kentucky Bureau of Agriculture, Labor and Statistics—First established March 20, 1876, as a Bureau of Agriculture, Horticulture and Statistics; the duties of the bureau were enlarged and present name adopted April 2, 1892. Biennial reports. Commissioner of Agriculture, Labor and Statistics, Lucas Moore, Frankfort, Ky.

Missouri Bureau of Labor Statistics and Inspection—Established March 19, 1879; enlarged March 23, 1883. Annual reports. Commissioner of Labor, Arthur Rozelle, Jefferson City, Mo.

Ohio Bureau of Labor Statistics—Established May 5, 1877. Annual reports. Commissioner of Labor, William Ruehrwein, Columbus, Ohio.

New Jersey Bureau of Statistics of Labor and Industries—Established March 27, 1878. Annual reports. Chief of Bureau of Statistics of Labor and Industries, Charles H. Simmerman, Trenton, N. J.

Illinois Bureau of Labor Statistics—Established May 29, 1879. Biennial reports. Secretary of Bureau of Labor Statistics, David Ross, Springfield, Ill.

Indiana Bureau of Statistics—Established March 29, 1879. Biennial reports. Chief of the Bureau of Statistics, John B. Conner, Indianapolis, Ind.

New York Bureau of Labor Statistics—Established May 4, 1883. Annual reports. Commissioner of Labor, John T. McDonough, Albany, N. Y.

California Bureau of Labor Statistics—Established March 3, 1883. Biennial reports. Commissioner of Labor, E. L. Fitzgerald, San Francisco, Cal.

Michigan Bureau of Labor and Industrial Statistics—Established June 6, 1883. Annual reports. Commissioner of Labor, Joseph L. Cox, Lansing, Mich.

Wisconsin Bureau of Labor Statistics—Established April 3, 1883. Biennial reports. Commissioner of Labor, Halford Erickson, Madison, Wisconsin.

Iowa Bureau of Labor Statistics—Established April 3, 1884. Biennial reports. Commissioner of Labor, W. E. O'Brien, Des Moines, Iowa.



Maryland Bureau of Industrial Statistics—Established March 27, 1884. Annual reports. Chief of the Bureau of Industrial Statistics, Chas. H. Myers, Baltimore, Md.

Kansas Bureau of Labor Statistics—Established March 5, 1885. Annual reports. Commissioner of Labor, W. L. A. Johnson, Topeka, Kan.

Rhode Island Bureau of Labor Statistics—Established March 29, 1887. Annual reports. Commissioner of Labor, Henry E. Tipke, Providence, R. I.

Nebraska Bureau of Labor and Industrial Statistics—Established March 31, 1887. Biennial reports. The Governor, *ex-officio* Commissioner. Deputy Commissioner of Labor and Industrial Statistics, J. H. Powers, Lincoln, Neb.

North Carolina Bureau of Labor Statistics—Established February 28, 1887. Annual reports. Commissioner of Labor, James Y. Hamrick, Raleigh, N. C.

Maine Bureau of Labor Statistics—Established March 7, 1887. Annual reports. Commissioner of Labor, Samuel T. Matthews, Augusta, Me.

Minnesota Bureau of Labor—Established as a Bureau of Labor Statistics March 8, 1887; enlarged and changed to Bureau of Labor, April, 1893. Biennial reports. Commissioner of Labor, L. G. Powers, St. Paul, Minn.

Colorado Bureau of Labor Statistics—Established March 24, 1887. Biennial reports. Commissioner of Labor, W. H. Klett, Denver, Colo.

West Virginia Bureau of Labor—Established February 22, 1889. Annual reports. Commissioner of Labor, I. V. Barton, Wheeling, W. Va.

North Dakota Department of Agriculture and Labor—Established October 1, 1890. Biennial reports. Commissioner of Labor, H. U. Thomas, Bismarck, N. D.

Utah Bureau of Statistics—Established March 13, 1890. Annual reports. Territorial Statistician, Joseph P. Bache, Salt Lake City, Utah.

Tennessee Bureau of Labor Statistics and Mines—Established March 23, 1891. Annual reports. Commissioner of Labor, A. D. Hargis, Nashville, Tenn.

Montana Bureau of Agriculture, Labor and Industry—Established February 17, 1893. Annual reports. Commissioner of Labor, J. H. Calderhead, Helena, Mont.

New Hampshire Bureau of Labor—Established March 30, 1893. Biennial reports. Commissioner of Labor, Julian F. Trask, Concord, N. H.

Washington Bureau of Labor—Established June 11, 1897. Annual reports. Commissioner of Labor, W. P. C. Adams, Olympia, Wash.

## **PART I.**

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CONDITION OF MANUFACTURES.

New Hampshire Bureau of Labor—Established March 30, 1893. Biennial reports. Commissioner of Labor, Julian F. Trask, Concord, N. H.

Washington Bureau of Labor—Established June 11, 1897. Annual reports. Commissioner of Labor, W. P. C. Adams, Olympia, Wash.

**PART I.**

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CONDITION OF MANUFACTURES.



## CONDITION OF MANUFACTURES.

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Condition of Manufactures shows by industries the number employed, January 1, 1897, and January 1, 1898, with per cent. of increase or decrease, average daily hours of labor, number of weeks in operation during 1897 and change in wage rates during the year in 500 manufacturing establishments in the State.

To secure the information desired relative to labor and wage conditions, the following blank was used and the result of the investigation is shown in the following tables, summary and analysis:

STATE OF WEST VIRGINIA,  
OFFICE OF COMMISSIONER OF LABOR.

Wheeling, W. Va.,.....1898.

.....

.....

I desire to report Condition of Manufactures in West Virginia for 1897.

Will you please report for your establishment by answering the following questions:

1. What do you manufacture? .....
2. Number of employes on pay roll, January 1, 1897? .....
3. Number of employes on pay roll, January 1, 1898? .....
4. Average hours of labor per day during 1897? .....
5. Number of weeks in operation during 1897? .....
6. Have wages been advanced since January 1, 1897? .....
7. What per cent? .....
8. Was such advance a restoration of former rates? .....
9. Have wages been reduced since January 1, 1897? .....
10. What per cent? .....

Section 5, Chapter 15, Acts of 1889, provides:

"If any person, or the officers of any company or corporation shall neglect or refuse to answer, within a reasonable time, any proper question propounded to him by the Commissioner of Labor, or if any person or officers of any company or corporation to whom a list of interrogatories has been furnished, shall neglect or refuse to fully and truthfully answer and return the same, such person or officer of such company or corporation shall be deemed guilty of a misdemeanor. The Commissioner of Labor shall report to the Prosecuting Attorney of the proper county all such violations of this act; whereupon said Prosecuting Attorney shall proceed against the persons guilty."

The results of this investigation will be published in totals, the name of establishment reporting being withheld and your answer to the questions asked will be considered as confidential.

The information you are requested to give is desired within ten days.

Will you please give the matter immediate attention and return in stamped, addressed envelope enclosed?

Yours very truly,

I. V. BARTON,

*Commissioner of Labor.*

Schedule No. .... Index .....



## INDUSTRY—BREWERIES AND DISTILLERIES.

Number of Establish- ment Reporting.	Number Employed January 1, 1897	Number Employed January 1, 1898	Average Daily Hours of Labor.	Number of Weeks in Operation During 1897	Per Cent Wages Advanced Since January 1, 1897	Per Cent Wages Restored since January 1, 1897	Per Cent Wages Reduced Since January 1, 1897
1	11	9	10	52	.....	.....	.....
2	86	94	10	52	.....	.....	.....
3	22	22	10	52	.....	.....	.....
4	53	57	10	52	.....	.....	.....
5	7	5	22	26	.....	.....	.....
6	8	10	10	52	10	.....	.....
7	3	3	10	..	.....	.....	.....
8	40	40	10	12	.....	.....	.....
Total	230	240					

## INDUSTRY—BRICK AND CLAYS.

Number of Establish- ment Rep-ting.	Number Employed January 1, 1897.	Number Employed January 1, 1898	Average Daily Hours of Labor.	Number of Weeks in Operation During 1897	Per Cent Wages Advanced Since January 1, 1897	Per Cent. Wages Restored Since January 1, 1897	Per Cent. Wages Reduced Since January 1, 1897
1	15	15	10	40	.....	.....	.....
2	23	23	10	35	.....	.....	.....
3	20	20	8	40	.....	.....	.....
4	30	30	8	36	.....	.....	.....
5	23	30	10	20	.....	.....	.....
6	15	15	10	52	.....	.....	.....
7	121	90	10	48	.....	.....	.....
8	17	17	10	28	.....	.....	.....
9	25	25	10	37	.....	.....	.....
10	3	2	9	5	.....	.....	20
11	15	15	8	.....	.....	.....	.....
12	8	8	10	12	.....	.....	.....
13	2	16	.....	24	.....	.....	.....
14	40	40	10	10	.....	.....	.....
15	221	272	10	35	.....	.....	.....
16	.....	110	10	36	5	.....	.....
17	.....	16	10	34	.....	.....	.....
18	35	35	9	44	.....	.....	.....
19	50	50	10	32	.....	.....	.....
20	35	35	9	32	.....	.....	.....
21	32	15	6	33	.....	.....	20
22	12	12	8	9	.....	.....	.....
23	.....	18	10	4	.....	.....	.....
24	8	8	10	16	.....	.....	.....

INDUSTRY—MISCELLANEOUS—*Continued.*

Number of Establish- ment Reporting.	Number Employed January 1, 1897	Number Employed January 1, 1898	Average Daily Hours of Labor.	Number of Weeks in Operation During 1897	Per Cent Wages Advanced Since January 1, 1897	Per Cent Wages Restored Since January 1, 1897	Per Cent Wages Reduced Since January 1, 1897
26	5	4	9	52	.....	.....	.....
27	2	3	10	52	.....	.....	.....
28	15	15	10	50	.....	.....	.....
29	27	29	10	52	.....	.....	.....
30	3	3	8	30	.....	.....	.....
31	9	9	10	32	.....	.....	.....
32	18	18	10	33	.....	.....	.....
33	12	6	10	48	.....	.....	10
34	50	60	9	52	.....	.....	.....
35	2	2	12	52	.....	.....	10
36	15	15	12	52	.....	.....	.....
37	3	3	10	52	.....	.....	.....
38	30	50	9	52	5	5	.....
39	4	4	10	52	.....	.....	.....
40	9	9	9	52	.....	.....	.....
41	2	2	12	52	.....	.....	.....
42	11	14	10	52	30	14	14
43	3	3	12	8	.....	.....	.....
44	14	15	10	52	.....	.....	.....
45	6	6	12	50	.....	.....	.....
46	8	8	10	52	.....	.....	.....
47	8	10	10	41	.....	.....	.....
48	13	22	9	40	.....	.....	.....
49	5	5	10	52	.....	.....	.....
<b>Total</b>	<b>961</b>	<b>1042</b>					

## REPORT OF THE COMMISSIONER OF LABOR.

## INDUSTRY—PAPER AND PAPER GOODS.

Number of Establish- ment Reporting.	Number Employed January 1, 1897.	Number Employed January 1, 1898.	Average Daily Hours of Labor.	Number of Weeks in Operation During 1897.	Per Cent. Wages Advanced Since January 1, 1897	Per Cent. Wages Restored Since January 1, 1897	Per Cent. Wages Reduced Since January 1, 1897
1	42	40	24	43	.....	.....	.....
2	40	40	24	44	.....	.....	.....
3	15	15	12	40	.....	.....	.....
4	25	25	10	52	.....	.....	.....
5	225	275	24	52	.....	.....	.....
6	200	250	24	52	.....	.....	.....
7	.....	10	10	30	.....	.....	.....
8	100	100	10	52	.....	.....	.....
Total	647	755					

## INDUSTRY—POTTERIES AND GLASS.

Number of Establishments Reporting.	Number Employed January 1, 1897	Number Employed January 1, 1898	Average Daily Hours of Labor.	Number of Weeks in Operation During 1897	Per Cent. Wages Advanced Since January 1, 1897	Per Cent. Wages Restored Since January 1, 1897	Per Cent. Wages Reduced Since January 1, 1897
1	500	600	10	50	15	15	.....
2	7	8	10	41	.....	.....	.....
3	5	5	10	40	.....	.....	.....
4	196	201	10	49	12	12	.....
5	3	3	10	52	.....	.....	.....
6	8	8	10	42	.....	.....	.....
7	12	12	10	46	10	.....	.....
8	25	28	9	43	10	.....	.....
9	125	185	9	50	.....	.....	.....
10	300	350	9	42	.....	.....	.....
11	30	38	9	40	.....	.....	.....
12	116	114	9	46	.....	.....	.....
<b>Total</b>	<b>1327</b>	<b>1552</b>					

## REPORT OF THE COMMISSIONER OF LABOR.

## INDUSTRY—TEXTILES.

Number of Establish- ment Reporting.	Number. Employed January 1. 1897	Number Employed January 1. 1898	Average Daily Hours of Labor.	Number of Weeks in Operation During 1897	Per Cent. Wages Advanced Since January 1, 1897	Per Cent. Wages Restored Since January 1, 1897	Per Cent. Wages Reduced Since January 1, 1897
1	8	.....	10	16	.....	.....	.....
2	7	7	10	40	.....	.....	.....
3	169	186	10	51	.....	.....	.....
4	40	40	10	50	.....	.....	.....
5	15	15	10	34	.....	.....	.....
6	75	75	10	51	.....	.....	.....
7	322	386	10	51	.....	.....	.....
8	9	9	10	24	.....	.....	.....
9	31	36	9	51	.....	.....	.....
10	30	30	10	38	.....	.....	.....
11	19	13	8	40	.....	.....	.....
12	4	4	10	21	.....	.....	.....
13	10	10	.....	25	.....	.....	.....
14	7	7	11	36	.....	.....	.....
15	45	45	9½	48	.....	.....	.....
16	15	15	10	40	.....	.....	.....
17	.....	10	10	18	.....	.....	.....
18	34	38	10	48	.....	.....	.....
19	3	2	8	33	.....	.....	.....
20	30	30	10	30	.....	.....	.....
21	30	30	9	50	.....	.....	.....
22	18	.....	10	26	.....	.....	.....
23	26	.....	8⅓	42	.....	.....	.....
24	10	10	10	40	.....	.....	.....

INDUSTRY—TEXTILES—*Continued.*

Number of Establish- ment Reporting.	Number Employed January 1, 1897	Number Employed January 1, 1898	Average Daily Hours of Labor.	Number of Weeks in Operation During 1897	Per Cent. Wag: s Advanced Since January 1, 1897	Per Cent. Wages Restored Since January 1, 1897	Per Cent. Wages Reduced Since January 1, 1897
25	6	6	11	25	.....	.....	.....
26	17	18	10	40	.....	.....	.....
27	30	30	10	40	.....	.....	.....
<b>Total</b>	1010	1052					

## RECAPITULATION.

INDUSTRY.	Number of Establish- ments Reporting.	Number Employed January 1, 1897.	Number Employed January 1, 1898.	Number Advancing Wages.	Number Restoring Wages.	Number Reducing Wages.
Breweries and Distilleries.....	8	230	240	1	.....	.....
Brick and Clays.....	33	937	1144	1	.....	4
Canned Goods and Preserves.....	9	428	474	1	.....	.....
Carriages and Wagons.....	9	105	137	3	.....	2
Cigars and Tobacco.....	54	830	982	2	.....	.....
Coke.....	58	3700	3887	5	3	2
Flour and Feed.....	25	122	131	2	.....	1
Furniture and Woodwork.....	54	921	1044	11	4	7
Iron and Brass Goods and Hard- ware.....	15	588	741	1	.....	.....
Iron and Steel.....	4	4339	4442	2	2	.....
Leather and Leather Goods.....	28	574	570	4	1	1
Lumber.....	78	2968	3423	2	1	6
Machinery and Castings.....	29	854	913	1	.....	.....
Miscellaneous.....	49	961	1042	9	3	4
Paper and Paper Goods.....	8	647	755	.....	.....	.....
Potteries and Glass.....	12	1327	1552	4	2	.....
Textiles.....	27	1010	1052	.....	.....	.....
Total, all industries .....	500	20541	22529	49	16	27



## CONDITION OF MANUFACTURES.

*Analysis.*

Showing by industries, number of establishments reporting, number employed January 1, 1897, number employed January 1, 1898, with per cent. of increase or decrease, average hours of labor per day, average number of weeks in operation during 1897, number of establishments who have advanced, reduced or restored wages during the year and the effect of change in wage rates.

*Breweries and Distilleries.*

Eight establishments in this industry report 230 employees on the pay rolls, January 1, 1897, and 240 employees on the pay rolls, January 1, 1898, an increase of 4.4 per cent.

Average number of weeks in operation, year ending January 1, 1898, 42.6, average daily hours of labor, 10.1.

One establishment reports advance in wage rates, affecting 8 employees.

No other change in wage rates reported during the year.

*Brick and Clays.*

Thirty-three establishments in this industry, report 987 employees on the pay rolls, January 1, 1897, and 1,144 employees on the pay rolls, January 1, 1898, an increase of 22.1 per cent.

Average number of weeks in operation, year ending January 1, 1898, 27.7; average daily hours of labor, 9.4.

One establishment reports advance in wage rates affecting 110 employees, and the wages of 46 employees in 4 establishments were reduced.

*Canned Goods and Preserves.*

Nine establishments in this industry, report 428 employees on the pay rolls, January 1, 1897, and 474 employees on the pay rolls, January 1, 1898, an increase of 10.7 per cent.

Average number of weeks in operation, year ending January 1, 1898, 41.8; average daily hours of labor, 9.3.

One establishment reports advance in wage rates, affecting 29 employees.

No other change in wage rates reported during the year.

*Carriages and Wagons.*

Nine establishments in this industry, report 105 employees on pay rolls, January 1, 1897, and 137 employees on pay rolls, January 1, 1898, an increase of 30.5 per cent.

Average number of weeks in operation, year ending January 1, 1898, 51.3; average daily hours of labor, 9.7.

Three establishments report advance in wage rates, affecting 95 employees and the wages of 7 employees in 2 establishments were reduced.

*Cigars and Tobacco.*

Fifty-four establishments in this industry, report 830 employees on the pay rolls, January 1, 1897, and 982 employees on the pay rolls, January 1, 1898, an increase of 18.3 per cent.

Average number of weeks in operation, year ending January 1, 1898, 48; average daily hours of labor, 9.3.

Two establishments report advance in wage rates, affecting 23 employees.

No other change in wage rates reported during the year.

*Coke.*

Fifty-eight establishments engaged in the manufacture of coke, reported 3,700 employees on the pay rolls, January 1, 1897, and 3,887 employees on the pay rolls, January 1, 1898, an increase of 5.1 per cent.

Average number of weeks in operation, year ending January 1, 1898, 44; average daily hours of labor, 8.4.

Five establishments report advance in wage rates, affecting 543 employees.

Two establishments reduced wages, affecting 70 employees and the wages of 159 employees in 3 establishments, were restored.

*Flour and Feed.*

Twenty-five establishments in this industry, report 122 employees on the pay rolls, January 1, 1897, and 131 employees on the pay rolls, January 1, 1898, an increase of 7.4 per cent.

Average number of weeks in operation, year ending January 1, 1898, 40.8; average daily hours of labor, 10.1.

Two establishments advanced wages, affecting 15 employees, and the wages of 2 employees in one establishment were reduced.

*Furniture and Woodwork.*

Fifty-four establishments in this industry, report 921 employees on the pay rolls, January 1, 1897, and 1,044 employees on the pay rolls, January 1, 1898, an increase of 13.3 per cent.

Average number of weeks in operation, year ending January 1, 1898, 43.3; average daily hours of labor, 9.5.

Eleven establishments report advance in wage rates, affecting 338 employees.

Seven establishments reduced wages, affecting 57 employees and the wages of 74 employees, in 4 establishments, were restored.

*Iron and Brass Goods and Hardware.*

Under this heading 15 establishments report 588 employees on the pay rolls, January 1, 1897, and 741 employees on the pay rolls, January 1, 1898, an increase of 26 per cent.

Average number of weeks in operation, year ending January 1, 1898, 50; average daily hours of labor, 9.5.

One establishment advanced wages, affecting 4 employees; no other change in wage rates reported during the year.

*Iron and Steel.*

Four establishments engaged in the manufacture of iron and steel report 4,339 employees on the pay rolls, January 1, 1897, and 4,442 employees on the pay rolls, January 1, 1898, an increase of 2.4 per cent.

Average number of weeks in operation, year ending January 1, 1898, 37.3; average daily hours of labor, 10.8.

Two establishments advance wages affecting 2,548 employees and the wages of 2,548 employees in 2 establishments were restored.

*Leather and Leather Goods.*

Twenty-eight establishments in this industry, report 574 employees on the pay rolls, January 1, 1897, and 570 employees on the pay rolls, January 1, 1898, a decrease of 0.7 per cent.

Average number of weeks in operation, year ending January 1, 1898, 51.2; average daily hours of labor, 9.85.

Four establishments report advance in wage rates affecting 23 employees.

One establishment reduced wages, affecting 15 employees, and the wages of 8 employees in one establishment were restored.

*Lumber.*

Seventy-eight establishments in this industry, report 2,968 employees on the pay rolls, January 1, 1897, and 3,423 employees on the pay rolls, January 1, 1898, an increase of 15.3 per cent.

Average number of weeks in operation, year ending January 1, 1898, 40.6; average daily hours of labor, 9.8.

Two establishments report advance in wage rates, affecting 10 employees.

Six establishments reduced wages, affecting 159 employees and the wages of 5 employees in one establishment, were restored.

*Machinery and Castings.*

Twenty-nine establishments in this industry, report 854 employees on the pay rolls, January 1, 1897, and 913 employees on the pay rolls, January 1, 1898, an increase of 6.9 per cent.

Average number of weeks in operation, year ending January 1, 1898, 46.6; average daily hours of labor, 9.5.

One establishment advanced wages, affecting 21 employees.

No other change in wage rates reported during the year.

*Miscellaneous.*

Under this head, 49 establishments whose business is of such nature that it would be impossible to classify them under any distinctive title, report 961 employees on the pay rolls, January 1, 1897, and 1,042 employees on the pay rolls, January 1, 1898, an increase of 8.5 per cent.

Average number of weeks in operation, year ending January 1, 1898, 45; average daily hours of labor 10.4.

Nine establishments report advance in wage rates, affecting 230 employees. Four establishments reduced wages, affecting 29 employees, and the wages of 114 employees, in three establishments, were restored.

*Paper and Paper Goods.*

Eight establishments in this industry, report 647 employees on the pay rolls, January 1, 1897, and 755 employees on the pay rolls, January 1, 1898, an increase of 16.7 per cent.

Average number of weeks in operation, year ending January 1, 1898, 45.6; average daily hours of labor, 11.5.

No change in wage rates reported during the year.

*Potteries and Glass.*

Under this head, 12 establishments report 1,827 employees on the pay rolls, January 1, 1897, and 1,552 employees on the pay rolls, January 1, 1898, an increase of 17 per cent.

Average number of weeks in operation, year ending January 1, 1898, 45; average daily hours of labor, 9.6.

Four establishments advanced wages, affecting 841 employees, and the wages of 801 employees in two establishments, were restored.

*Textiles.*

Twenty-seven establishments in this industry, report 1,010 employees on the pay rolls, January 1, 1897, and 1,052 employees on the pay rolls, January 1, 1898, an increase of 4.2 per cent.

Average number of weeks in operation, year ending January 1, 1898, 37.3; average daily hours of labor, 9.4.

No change in wage rates reported during the year.

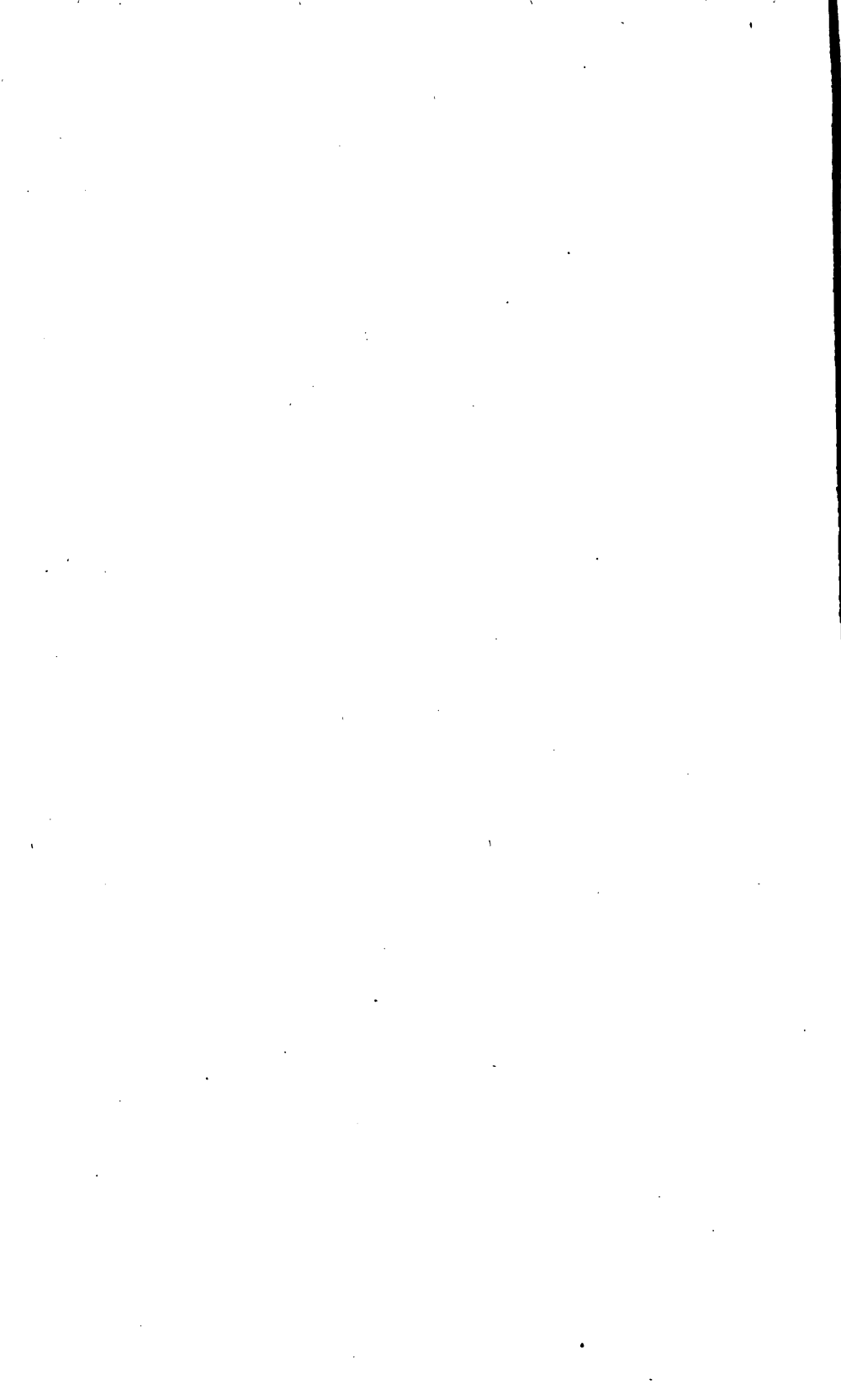
*Summary, All Industries.*

In all industries, 500 establishments report 20,541 employees on the pay rolls, January 1, 1897, and 22,529 employees on the pay rolls, January 1, 1898, an increase of 9.7 per cent.

Average number of weeks in operation year ending January 1, 1898, 43.4; average daily hours of labor, 9.8.

Forty-nine establishments report advance in wage rates, affecting 4,838 employees.

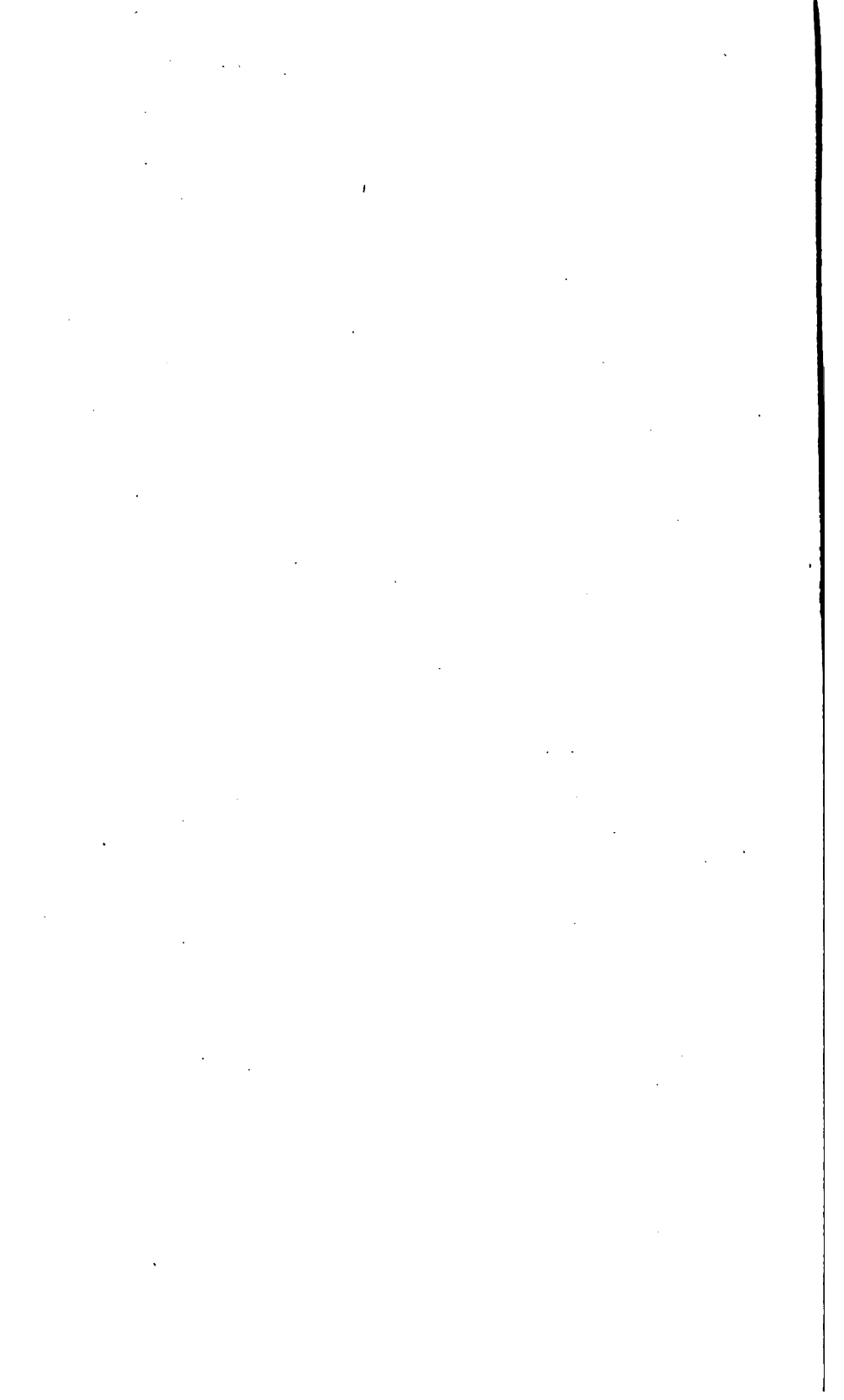
Twenty-seven establishments reduced wages, affecting 885 employees, and the wages of 8,709 employees in 16 establishments, were restored.



## **PART II.**

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**STRIKE OF BITUMINOUS COAL MINERS, 1897**





## STRIKE OF BITUMINOUS COAL MINERS, 1897

One of the greatest wage struggles in the history of the country, the strike of bituminous coal miners of Ohio, Indiana, Illinois, West Virginia and Western Pennsylvania, for a uniform mining rate, on a basis of 69 cents per ton for Western Pennsylvania, with a price differential elsewhere, was ordered by the executive committee of the United Mine Workers of America, at Columbus, Ohio, July 4, 1897, and settlement was declared, pending arbitration, on a basis of 65 cents per ton in Western Pennsylvania, at a delegate convention of miners, held September 8 to 11, 1897, at Columbus.

Of 18,000 men employed in the coal mines of West Virginia, but 206 in the Pan-Handle district, report organization in the United Mine Workers of America, at the beginning of the strike, and subject to the strike call of the executive officers.

Beyond suspension of the mines in the Pan-Handle where these organized operatives were employed, the mining industry of the State was not affected early in the struggle, except to appreciate the stimulus of an increased demand, caused by the scarcity of coal in the markets, due to suspension of mining elsewhere.

As during the great strike of the miners in 1894, the operators in many parts of the State increased the wages of their men and paid a bonus sharing with them the profits of increased business activity and advanced price of their product.

In 1894 the West Virginia operator secured in this way new trade and markets, which the excellence of West Virginia coal enabled them to hold after the termination of the strike and secured to them and their employees great permanent benefit.

While the miners of West Virginia at the beginning of the strike were largely unorganized their condition in many of the districts visited by the Commissioner of Labor was better than reported in other sections of the country in some places the men expressing themselves as being satisfied with their treatment at the hands of the operators, with no complaint excepting the company store.

The first week of the great struggle found idle mines and men in the Pan-Handle district in West Virginia, while in other States, the strike rapidly assumed alarming proportions. In Western

Pennsylvania, in the Pittsburgh district, the miners themselves could hardly have anticipated that such general suspension could be wrought in the bituminous mining industry, in so short a time.

Within a week, the coal tipples dotting the Youghigheny, Alleghany and Monongahela valleys, that annually produce thousands and thousands of tons of coal, entering the competitive markets of the world, were quiet as so many graves, while on the hill-sides, basking in the shade, 18,000 unemployed anxiously waited for more to join the army of the strikers.

The success early attending the movement, greatly elated the leaders.

M. D. Ratchford, President of the United Mine Workers of America, speaking of the magnitude of the strike and the interest taken in it, said:

"The enormity of the movement is attracting the attention of the country.

"National legislators express alarm at the outcome.

"This is the first time in the history of the mining trade, that the regulation of our wages or our trade affairs, has given high circles any particular concern.

"We are pleased to know that even now, interest is being expressed in the peaceful solution of this difficulty.

"In summing up the whole situation, I feel confident of the outcome.

"Our miners have an opportunity at this time, which they have never had before.

"They must take advantage of it. It is to be hoped that every man in this country will lay down his pick and thereby do his part, to bring about a better system for himself and his posterity. The press, the pulpit and the people, are almost united in their support. Offers of assistance have come from State and National unions.

"With all these influences and many others that might be enumerated, the future of the mining industry will occupy a higher plane and at least the necessities of life, will be insured to those dependent on that branch of industry."

At this point, it became more and more evident that the success of the strike depended on the suspension of mining in West Virginia.

As in 1894, the West Virginia diggers, with the exception of the organized men in the Pan-Handle, were working night and day, many at increased wages, and the operators were making ready to meet the increased demand.

At a conference of national labor leaders, called July 9th, at

Pittsburg, to devise ways and means to assist the men struggling for wage advancement, it was agreed that the situation in West Virginia required attention, in order that the suspension should become absolutely general and success assured; that the West Virginia miners held the key to the situation, and without their united support the success of the general movement would be greatly jeopardized, and an organized effort to secure a general suspension of mining in West Virginia, was decided upon.

It was this field that broke the strike in 1894, and it was determined that no effort should be spared to bring it into subjection at this time.

This conference, called suddenly, represented nearly every branch of organized labor in the United States. There were present:

Samuel Gompers, President of the American Federation of Labor; M. D. Ratchford, National President of the United Mine Workers of America; M. M. Garland, President of the Amalgamated Association of Iron and Steel Workers; Stephen Madden, Secretary of the Amalgamated Association; J. M. Hughes, First Vice President of the Federation of Metal Trades; M. J. Counahan, National Secretary of the Journeyman Plumbers' Association; M. P. Carrick, President of the Brotherhood of Painters and Decorators; L. R. Thomas, President of the National Pattern Makers' League; W. B. Mahon, President of the Amalgamated Association of Street Railway Employees; Patrick Dolan, District President of the United Mine Workers of America, and William Warner, District Secretary of the United Mine Workers.

"On to West Virginia," was the cry, and within a week, the cleverest organizers and exhorters of the country were at work throughout the diggings of the Mountain State, spreading the doctrine of strike.

Headquarters were established at Charleston, with W. D. Mahon, President of the Amalgamated Association of Street Railway Employees, in charge.

The State was divided into three districts, with a labor leader in charge of each.

J. W. Rae, of Chicago, Vice President of the Painters and Decorators' National Union, was placed in charge in the Fairmont district; Robert Askew, President of the Miners' National Association, in the Elk Horn district, and Chris. Evans, ex-Secretary of the American Federation of Labor, in the New River district.

An interesting feature of the national situation at this time,

was the unofficial conference of Labor Commissioners and Boards of Arbitration, of the five States affected, called July 12th at Pittsburg, for the purpose of effecting a settlement of the difficulty by arbitration.

Ohio, Pennsylvania, Indiana, Illinois and West Virginia, were represented at the conference. Selwyn N. Owens, Joseph Bishop and General John Little, of the Ohio State Board of Arbitration, L. H. McCormack and B. F. Schmid, of the Labor Commission of Indiana, James M. Clark, Chief of the Bureau of Industrial Statistics of Pennsylvania, D. J. Keefe, J. J. Gill and H. R. Colif, Labor Commissioners of Illinois, and I. V. Barton, Commissioner of Labor of West Virginia, being present.

Warring factions among the operators in the Pittsburg district, however, defeated all efforts at conciliation.

W. P. De Armitt, President of the New York and Cleveland Gas Coal Co., thus defined the situation before the conference committee. He said:

“A direct arbitration of the price per ton is impossible, because the company store system and the cheating methods employed by some of the operators here, prevent other operators, who have no company store and employ honest methods, from competing with them on an even basis of price per ton.”

President De Armitt recited the history of the miners' struggles for better conditions and told of the great uniformity movement in 1895-'96, for honest weight, uniform screens and the abolishment of company stores, which failed of its purpose.

If true uniformity were secured in the Pittsburg district, it would so involve the interests of the other bituminous States, he said, that ultimately there would have to be a chain of uniform agreement in all the States, which would cost much money and require considerable time to accomplish.

The arbitrators secured a conference of the operators of the Pittsburg district, at which a “true uniformity” agreement was adopted, providing for cash payment of wages, check-weighmen on the tipples, abolition of company stores and screens not exceeding one and one-half inches, to become effective when signed by 95 per cent. of the operators, but no adjustment of existing differences could be effected.

Each day the magnitude of the strike increased.

Retail prices of bituminous coal advanced twenty-five per cent. Numbers of operators requested permission to operate their mines

at the advanced rate demanded by the men but were refused by the miners' officials on the ground that the success of the movement depended on the strike becoming general.

Slowly the strikers gained among the miners of West Virginia.

Sympathy spread the cause, where no personal grievance existed, and one by one, additions were made to the national organization, through the efforts of the strike agitators.

On July 15th, the executive officers issued the following proclamation from the National headquarters, United Mine Workers of America, at Columbus:

COLUMBUS, OHIO, July 15, 1897.

*To the Miners and Mine Workers of the Country, Greeting:*

Our fight for living wages now covers in whole or in part eight States of this Union. It is a general suspension and no local settlements will be authorized or recognized. The second week and eighth day of our suspension begins with greater assurance of ultimate victory than any previous day. Our forces are increasing every hour, our determination is unflinching and our actions are law-abiding in every particular.

The States and number of miners involved are as follows:

Western Pennsylvania—The promptitude with which these miners responded to our call is indeed remarkable. Fully 20,000 miners have joined us for living wages, which makes suspension almost unanimous in every mine in the district. Work still continues in the central field, but steps will be taken in a few days looking to a suspension, which, it is believed, will be successful.

Ohio—Twenty-eight thousand miners have laid down their tools in their demand for living wages, making the suspension general excepting a few local mines.

Indiana—Advices received today report every mine and every miner in this State suspended. Eight thousand have joined the march for living wages.

Illinois—Reports from this State are to the effect that suspension is principally general, and that miners are determined to continue the march until living wages is secured.

West Virginia—About 3,000 miners have joined the movement. Reports from various sections of the State confirm the belief that the miners will suspend. Eight organizers have left this city for West Virginia. The supply of coal from that field will be cut off in a few days.

Kentucky and Tennessee—About 4,000 miners have suspended and others may be expected to follow. The feeling in favor of the movement here is increasing.

Kansas—Miners are at work, but will hold a convention on Saturday. It is expected that they will also suspend.

Alabama—Reports indicate that 3,000 or more miners are sus-

pended. Convention today. Nothing further learned of their action.

The supply of coal is fast becoming exhausted at the various distributing points. Railroads are confiscating shipments. Cities are almost without supply; in fact, a coal famine is near at hand.

Do not give much attention to press reports. They are largely unreliable. Bulletins will be issued from this office as occasion demands.

In conclusion, we desire to state that the outlook is more than encouraging, and every indication points to an ultimate triumph.

The rates demanded are being offered by many operators, and if the miners of this country but hold out as they should do, as we believe they will do, living wages will be secured at no distant day.

Fraternally,

(Signed,)

M. D. RATCHFORD,  
*President.*

W. C. PEARCE,  
*Secretary.*

A conference of the labor leaders of the country was held July 27th at Wheeling, to consider the strike situation and devise means for its advancement and the assistance of the strikers.

The conference was called by Samuel Gompers, President of the American Federation of Labor, at the request of the executive officers of the miners' organization, and nearly all of the great labor organizations of the country were represented. There were present:

Samuel Gompers, of New York, President of the American Federation of Labor; Frank Morrison, of Chicago, Secretary of the American Federation of Labor; P. H. Morrissey, of Peoria, Ills., Grand Master of the Brotherhood of Railway Trainmen; W. D. Mahon, President of the Street Railway Workers; James R. Sovereign, of Sulphur Springs, Arkansas, Grand Master Workman of the Knights of Labor; James H. Sullivan, of Baltimore, President of the International Association of Painters and Decorators; J. B. Lennon, of Bloomington, Ills., President of the Custom Tailors' Union; J. F. Mulholland, of Toledo, Ohio, President of the International Union of Bicycle Workers; Jesse Johnson, of Nashville, Tenn., President of the International Printing Pressmen's Union of North America; Theodore Perry, Vice President of the International Typographical Union; Robert Askew, of Detroit, President of the Northern Mineral Mine Workers' Union; William McKinney, of Lafayette, Ind., President of the Brotherhood of Painters; J. W. Rea, of Chicago, Second Vice President

of the Brotherhood of Painters; G. W. Perkins, of Chicago, President of the International Tobacco Workers' Union; Patrick Dolan, President of the Pittsburg district of United Mine Workers; M. M. Garland, of Pittsburg, President of the Amalgamated Association of Iron and Steel Workers; C. H. Watkins, of Chicago, Assistant Grand Chief of the Order of Railway Conductors; F. P. Sargent, of Peoria, Ills., Grand Master of the Brotherhood of Locomotive Firemen; V. Fitzpatrick, of Columbus, Ohio, Third Vice President of the Brotherhood of Railway Trainmen; Michael D. Ratchford, of Columbus, Ohio, President of the United Mine Workers of America; T. L. Lewis, of Bridgeport, Ohio, State Secretary of the United Mine Workers of Ohio; Eugene V. Debs, of Chicago, the former head of the American Railway Union; J. Kunzler, of Pittsburg, Secretary of the American Flint Glass Workers' Union; W. C. Pearce, of Columbus, Secretary of the United Mine Workers of America; W. H. Riley, of Wheeling, President of the National Stogie Makers' League; M. P. Carrick, of Pittsburgh, Secretary of the Painters' Organization; P. J. Counahan, of Pittsburgh, Secretary-Treasurer of the National Plumbers and Gas Fitters' Union.

Many others, unable to respond to the call on account of the limited notice given, telegraphed assurance of the support of their organizations, in the struggle for wage advancement.

The first session of the big conference was called to order at noon, in the Trades Assembly Hall, and on motion of Grand Master Workman James R. Sovereign of the Knights of Labor, Samuel Gompers, President of the Federation of Labor, was called to the chair and presided throughout the meeting.

This conference of the executive heads of the various labor organizations was one of the most important gatherings of its kind in the history of the country.

Differences between organizations were sent to the rear and the leaders met, in common interest of the great strike, as if they had never fought each other with the most violent bitterness.

These men, the heads of rival labor organizations, which for years had fought tooth and nail, met and joined forces in the common desire to win in the struggle of the miners.

What the conference accomplished can be reviewed in short space.

It was decided to make a renewed and determined effort to make the strike general among the miners of West Virginia, each union representative at the conference, to send its organizers, which,

with those of the United Mine Workers' organization, would cover the entire State with agitators. An appeal to the people of the country, for assistance, was made and sympathetic mass meetings, to be held simultaneously all over the country, were arranged for.

This appeal, the report of the conference committee on ways and means to aid in a successful termination of the strike, is as follows:

A wail of anguish mingled with desperation arises from the bowels of the earth and the miners cry for relief, for some degree of justice, touching the responsive chords in the hearts and consciences of the whole people. Drudging at wages when employed which are in ample and portend misery, starvation and slavery, the miners are confronted with a condition by which their scant earnings are denied them, except through the company pluck stores, which out-Shylock the worst features of this nefarious system, is a stigma on the escutcheon of our country and a blot on our civilization.

We, the representatives of the trades unions and of all organized labor of the United States, in conference assembled, to consider the pending struggle of the miners, for wages sufficient to enable them to live and to enjoy at least some degree of the necessities of life, are determined to forever put a stop to a state of starvation, in which they are now engulfed.

The deplorable condition of the miners, is well known to all of our people. They live in hovels, unable to buy sufficient bread to ward off starvation, and in many cases not sufficiently clothed to cover their nakedness, and their children unfit to attend school because of lack of food and clothing, making them a danger to the future of our republic.

We feel assured that all men and women who love their own families, or who have one spark of human sympathy for their fellows, cannot fail to give all the aid in their power to enable the miners to win their present battle.

The representatives of the miners have been restrained by injunction when exercising their fundamental right of public assembly and free speech to present to the world their grievances. We, as American citizens, resent this interference with the rights guaranteed to us under the constitution.

In the ordinary affairs of life all enjoy privileges and rights which constitutions neither confer nor deny, but the guarantee of the right of free public assembly and free speech was intended to give opportunity to the people or any portion of them to present the grievances from which they suffer and which they aim to redress.

We denounce the issuance of injunction by the judges of West Virginia, Pennsylvania and other States as wholly unjustified, unwarranted and unprecedented, more especially in the absence of



any exhibition or manifestation of force on the part of the outraged miners.

We call upon the Governor of West Virginia and upon Governors of all other States and on all public officials for full and ample protection in the exercise of our rights of free speech and public assemblage. We have no desire to trespass upon the rights of anyone, and we demand protection in the exercise of those rights handed down to us by the founders of the republic.

We recommend that indignation meetings be held throughout the entire country to give expression to the condemnation of the unwarranted injunction interfering with the free rights of free assemblage and free speech, and we also extend sympathy and support to the mine workers to the utmost extent.

We hereby call upon each national and international organization of labor to send representatives to act for and by the direction of the United Mine Workers as organizers in West Virginia, Pennsylvania and such other States as may be necessary.

Fully imbued with the heroic struggle which the miners are making for pure womanhood and innocent childhood, for decency, for manhood and for civilization, and with the consciousness of the justice of their cause and of the responsibility of their actions, we call upon the workingmen of our country to lend all possible assistance to our suffering, struggling fellow workers of the mines, and to unite in defense of our homes, our rights, our citizenship and our country.

The officers of the several organizations affiliated with the American Federation of Labor were requested to transmit letters to their local unions to take action in reference to the appeal, a vote of thanks was tendered the Ohio Valley Trades and Labor Assembly for courteous treatment accorded the visitors and at midnight the conference adjourned *sine die*.

Eugene V. Debs, the former head of the American Railway Union, and James W. Rea, of Chicago, of the Brotherhood of Painters, addressed a mass meeting, on the evening preceding the conference, at which probably 3,000 people were in attendance.

Both made strong appeals for organized labor and the miners

Referring to the conference of labor leaders, Mr. Rea said the present struggle was one in which all organized labor was involved and by which it must stand or fall. "We want to win this strike," he said, "for the sake of the principles involved."

Mr. Debs made an impressive argument for the maintenance of good wages.

"What we Americans want," he said, "is good homes, and with the fall of home, falls our republic."

The leader of the social democracy, chose to look upon the

brighter side of things and eloquently told of a day to come when labor would be blessed with freedom and happiness.

He urged workingmen to make good use of their time. "More books are needed and less beer. I know," he said, "for I have tried both."

The granting of injunctions, July 26th, by Special Judge John W. Mason, in the Circuit Court of Marion County, restraining Eugene V. Debs and others from interfering with the employees of the West Fairmont and Monongah Coal and Coke Companies, denounced by the conference of labor leaders at Wheeling, as interfering with free speech and assemblage, was at this time the subject of much controversy.

The Court, in its decision granting these injunctions, reviewed the case and gave as its opinion:

"West Fairmont Coal and Coke Company *vs.* Eugene V. Debs *et als.*, bill for injunction."

This is a bill filed by the West Fairmont Coal and Coke Company, asking that an injunction be awarded by this court, enjoining and restraining the defendants named in the bill and their confederates, co-conspirators and associates from in any manner interfering with the employees of the plaintiff now in its employ, and from in any manner interfering with any person who may desire to enter the employment of the plaintiff by use of threats, personal violence, intimidation or by any other means calculated to terrorize, alarm, intimidate or place in fear any of such employees in any manner of form whatever.

The injunction will be refused unless the court is satisfied from the allegations of the plaintiff's bill that the property or business of the plaintiff is about to be destroyed, irreparably injured, or great and lasting injury will be done by the wrongful and illegal acts of the defendants. If such be the fact, it is the duty of the court to administer the only remedy which the law allows to prevent the commission of such acts. It is well settled by authorities and cannot be doubted upon principle that a court of equity should not hesitate to use this power when the circumstances of the particular case require it to be done in order to protect the rights and property of a citizen against irreparable damage by the wrong-doer. It must be borne in mind that stopping a person's business or preventing a laborer from working is an injury. A combination of men whose avowed and professed object is to injure and destroy the property or business of another and who do anything in pursuance of that object, and more especially if they succeed to any extent in accomplishing their purposes, and declare their intention to continue, should be restrained and prevented by some means from accomplishing these purposes. It is no answer to say that these illegal and unlawful acts, if accomplished, subject the perpetrators to criminal prosecution or sub-

ject the wrong-doers to actions for damages. If the acts threatened involve irreparable injury to or destruction of property, as well as the continuous acts of trespass, the remedy at law is wholly inadequate, and if the courts of equity did not interfere in cases of this sort, then, as has been truly said by Justice Story, there would be 'a failure of justice in this country.'

The jurisdiction of courts of equity in controversies of this character is no longer an open question in this country. It is fully recognized in all Federal courts, and has been exercised in many of the State courts. The recent case of *E. M. Arthur vs. Thomas F. Oaks et als.* (63 Federal Reporter, 310), Mr. Justice Hanlon, reviewing the temporary restraining order issued by Judge Jenkins, has presented so clearly and forcibly the law respecting unlawful conspiracies as to forever set the question at rest. The opinion recognizes the right of employes and labor organizations in the absence of a contract binding the employe to a given term of service, whenever they become dissatisfied with their employment or wages, to quit the services of the employer, either separately or collectively, and that they have a right by pre-agreement or pre-concert of action to unite together for taking peaceful or lawful means to secure an increase of wages; to withdraw separately or in a body from the service of the employer when dissatisfied. It is not competent for the courts to interpose to restrain their right of volition, which is among the natural and inalienable rights of every citizen to work for whom he pleases and where he can get employment, and to quit whenever he is dissatisfied therewith. But the opinion distinctly announces the further proposition that such men have no right to conspire and combine together not only for the purpose of securing better conditions and wages and quitting the service if not secured, but to go further for the purpose of preventing the employer from supplying the places vacated with other employes who are ready and willing to take their places; and that they have no right to combine and federate together for the purpose of injuring and destroying the property of their employer, or to obstruct or interfere with his dominion over and control of his private property. The learned justice says:

'It seems entirely clear, upon authority, that any combination or conspiracy upon the part of these employes would be illegal, which has for its object to cripple the property in the hands of the receivers, and to embarrass the operation of the railroad under their management, either by disabling or rendering unfit for use the engines, cars or other property in their hands, or by interfering with their possession, or by actually obstructing their control and management of the property, or by using force, intimidation, threats or other wrongful methods against the receivers or agents, or against employes remaining in their service, or by using like methods to cause the employes to quit, or prevent or deter others from entering the service in place of those leaving it. Combinations of that character disturb the peace of society, and are mis-

chievous in the extreme. They imperil the interest of the public, which may rightfully demand that the free course of trade shall not be unreasonably obstructed. They endanger the personal security and the personal liberty of individuals, who, in the exercise of their inalienable privilege of choosing the terms upon which they will labor, enter or attempt to enter the service of those against whom such combinations are aimed.'

The question is again discussed in the learned opinion of Judge Phillipp, Judge of the District Court of the United States, in the case of the United States *vs.* M. J. Elliott *et als.*, reported in 84 Federal Reporter, page 27.

The Supreme Court of the State of Missouri in a well considered case, says:

'A court of equity may interfere by injunction to prevent persons from attempting by intimidation, threats or personal violence and other unlawful means, to force employes to quit work and join in a strike.'

Hamilton Brown Shoe Company *vs.* Saxey *et al.*, 32 S. W. Rep. 1106.

The prayer in the bill in the last named case is very similar to the prayer found in the case at bar. It asks among other things:

'That the defendants, their associates and confederates be enjoined from in any manner interfering with the employes of this plaintiff now in the employ of the plaintiff, and from in any manner interfering with any person who may desire to enter the employ of this plaintiff, by use of threats, personal violence, intimidation or other means calculated to terrorize or alarm the plaintiff's employes in any manner or form whatever; and that said defendants and their associates and confederates aforesaid be restrained by order of this court from undertaking by the use of means aforesaid to induce or cause any of the employes of this plaintiff to quit the employment of this plaintiff, and that the defendants aforesaid and their associates and confederates be enjoined from congregating and loitering about the premises of this plaintiff at the place aforesaid, and that they be required by the injunction of this court to go about their ordinary business and abstain from in any way interfering with the business of this plaintiff.'

And by an additional order entered in this case the defendants were restrained 'From attempting to force the plaintiff's employes to leave their work by intimidation and threats of violence and for assembling for that purpose in the vicinity of the plaintiff's factory.'

It will be seen by the reference to the case just quoted from that the prayer of the bill and the injunction granted are very similar to the prayer of the bill in the case now before me. This case, as I have said, went to the Supreme Court of the State of Missouri and was sustained.

The same questions have recently been passed upon by Circuit Court of Alleghany county, State of Maryland, in the case

of the Consolidated Coal Company, of Maryland against William B. Wilson *et als.*, in which case the plaintiff asked, among other things, for an order 'Prohibiting each and all of them from continuing their unlawful assemblages in or near to the said mines, or on or near the paths and approaches leading to the mines, of the said Consolidated Coal Company, and from continuing to assemble there with intent to forcibly prevent the miners working for your orator in said mines, and from going to work therein and from then and there using threats, menaces, shouts, show of force, and offers of violence to interfere with, prevent and stop the miners in said mines of your orator from continuing their daily labor therein.'

This case will be found in the Circuit Court of Alleghany county, State of Maryland, No. 4394 Equity.

It will thus be seen that the right and duty of the courts to proceed by injunction in proper cases are well recognized in this country.

I am of the opinion that the plaintiff's bill upon its face presents a case which comes entirely within the adjudicated cases, and will therefore issue a temporary restraining order.

The material facts in the case of the Monongah Coal and Coke Company *vs.* the same parties in which an injunction is also asked for, being practically the same as the facts in this case, the same rules of law are applicable.

JOHN W. MASON."

Samuel Gompers, President of the Federation of Labor, Grand Master Workman Jas. R. Sovereign, of the Knights of Labor, and M. D. Ratchford, President of the United Mine Workers of America, as a committee appointed at the conference of leaders at Wheeling, called upon Governor Atkinson at Charleston, the day following the conference appealing from these injunctions, which they claimed prevented the miners from assembling, thereby preventing the strike leaders from presenting their side of the controversy, in their endeavor to bring about the organization of the miners in West Virginia.

The Governor stated he had not yet seen an official copy of the injunction and while the judiciary was an independent branch of the State government, over which the Executive had no control, he personally was opposed to any attempt on the part of any person or persons, to prevent citizens from discussing in a peaceable and law abiding manner, any subject of general interest.

He expressed a willingness to guarantee, as far as it lay within his power, to the citizens of the State, the right of free speech, so long as the discussions were of a peaceable and law abiding nature and stated that as soon as he received an official copy of the injunc-

tion, which had been telegraphed for, and examined it, he would advise with the committee by letter.

The conference of the leaders with the Governor was of the friendliest nature, and the position taken by the Chief Executive was commended.

On August 3, Governor Atkinson wrote the committee:

"Referring to your visit to me several days ago, in which there was a friendly discussion between us of certain phases of the labor troubles in this State, and especially of the strike of the coal miners, and to your several telegrams recently received and referring also especially to your desire that I should take steps to secure to you and the workingmen of the State right and privilege of holding public meetings for the discussion of matters concerning the welfare of the miners, I beg to say to you that I have given the matter most earnest consideration.

In this controversy, there are to be considered both the rights of property and the rights of citizens. In our talk you spoke of a certain injunction that had been issued by the Circuit Court of Marion county against you and others, according to the terms of which, as you understand them, you are prohibited from holding public meetings for the purpose of discussing the benefits of the organization of the coal miners of the Fairmont region.

I understand that this injunction has not been served upon you, and that you have not been called upon to make any answer thereto. The Circuit Court of Marion county belongs to the judicial department of the State government, which is a separate and independent department from the executive; and it would be obviously improper for me to express my opinion as to whether said injunction was properly or improperly issued, or whether it is too sweeping in its character, or too comprehensive in its scope; and especially as the matter has not yet been determined by the Supreme Court of this State, to which you can take an appeal, and in which you can, I have no doubt, have a fair and proper hearing.

I have, however, requested the Attorney General to appear in this matter and assist in having an early adjudication by the Supreme Court of this injunction proceeding. I have done this because the injunction presents a somewhat novel question, and I believe it is the first of the kind to be issued in this State, and because it affects the rights of a large number of citizens of West Virginia. The bill of rights of the constitution of this State guarantees to the people thereof 'the right to assemble in a peaceable manner, to consult for the common good, to instruct their representatives, or to apply for redress of grievances.' And it also provides that 'no law abridging freedom of speech or of press shall be passed.' These are rights which have come down to us from the days of Magna Charta, which rights, as long as I am Governor, shall be preserved to the people of the State, if it is in my power so to do.

It is the right and duty of the legislature to enact laws; of the courts to construe them; and of the executive to enforce them. None of these departments should interfere with or usurp the function or prerogatives of the others. I will say, however, that I now hold and always have held that the right of free speech and of public assembly should in no case be abridged, and that the widest possible liberty should be allowed our people. I have always maintained that labor and capital had the inherent right to organize for the better protection of both their interests, provided such organizations are maintained within the restrictions of the statutes of our State. It is improper and unlawful to use threats, force or intimidation of any sort to induce men to connect themselves with or become a part of any organized body of capitalists or laborers. It is also improper and unlawful for any body of men, organized or unorganized, to trespass upon the property or premises of a citizen, but it is my opinion that labor organizers or capital organizers, or any other organizers, for that matter, may present their causes in a proper manner, in public places, to the people, and induce them, by moral suasion, to connect themselves with any organization which is in itself lawful in its aims and purposes.

In other words, I claim the right for myself, as a citizen of West Virginia to discuss politics, religion, science, labor organizations or any other subject I may choose to discuss, in public halls or public highways, provided always that I confine myself to the requirements of the law which inhibits me from trespassing upon the property and vested rights of other citizens. I mean to say that the bill of rights of our constitution allows me these privileges, and that no court can impair these rights, if I confine myself to moral suasion, and do not incite the people to riotous conduct or unlawful acts.

So long as the working men of this State conduct their cause in a lawful and peaceful manner it will be my duty, as it will be my pleasure, to protect them but if they should, in an ill-advised hour, violate the law by interfering with the rights or property of others, it will be my sworn duty to repress energetically and speedily all lawlessness and to see that the public peace is maintained at all hazards, and that the property of our people is protected; for we must all, whether rich or poor, employer or employe, high or low, respect and obey the law.

Very respectfully yours,

G. W. ATKINSON."

This expression on the part of the Governor was received with general satisfaction, the Ohio Valley Trades and Labor Assembly, at Wheeling, August 9th, expressing their appreciation of the sentiments expressed, by adopting the following resolution:

"*Resolved*, That we, the Ohio Valley Trades and Labor Assembly, commend the position taken by His Excellency, Governor G

W. Atkinson, on the infamous government by injunction, and that our secretary be instructed to send him a copy of this resolution."

President Gompers, of the American Federation of Labor, in reply to the Governor's letter, said:

"I have the honor to acknowledge the receipt of your favor of the third in regard to the matter of the right of public assemblage and free speech in the State of West Virginia, and I beg to assure you that your declarations of rights enjoyed by the people under the constitution of the United States, and of the State of West Virginia, are all that can be expected, and all that we require.

There is no desire on the part of the miners, their representatives or their friends, to violate the laws of our country, or of the State of West Virginia. I believe with you that you have a right to claim for yourself, as we claim for ourselves, the privilege to 'discuss politics, religion, science, labor organization, or any other subject' we may choose to discuss, in public halls or on public highways. The bill of rights of our constitution allows these privileges and no court can impair them. It is indeed gratifying to learn from your letter that so long as the workingmen of the State of West Virginia conduct their cause in a peaceful manner that it will be your pleasure as well as your duty to protect them. That is all that we ask.

"Permit me to assure you that I appreciate most highly the position you take in this matter and the emphatic manner in which it is declared."

The strike agitators continued their work of organization among the miners. Meetings, which did not violate the decision of the courts, by trespassing upon the property of the mining company or interfering with their employes, were held without molestation, and the right of free speech and public assemblage, as sacred on West Virginia soil as upon the soil of any State or country, met with no interference.

Systematic work of relief among the strikers was taken up.

In Wheeling, a committee appointed by the Ohio Valley Trades and Labor Assembly, opened a store, where contributions of provisions and clothing were received, a canvass of the business districts of the city was made and the following appeal to the public for aid was issued:

"The destitute condition of the miners of the Wheeling district is such that it is imperative on our part to do something to alleviate their distress. With that end in view we have opened a relief store at 1622 Main street, and the committee appeal to the generosity of the merchants, the business people and the working



people of Wheeling to aid us in this fight by contributing whatever they can to provide the suffering miners and their families with food while engaged in this struggle for living wages. We feel assured that our appeal will be met with that spirit of generosity characteristic of the citizens of Wheeling, and they can rest assured that it will be thankfully received and judiciously expended.

(Signed)

"WILLIAM ANDERSON,

"H. A. FOSTER,

"MATHEW SCOTT,

"ROBERT COCHRANE,

*"Committee of the Ohio Valley Trades Assembly."*

The headquarters of the committee soon assumed the appearance of a general store, where everything from a package of pins to a mowing machine might be purchased, and numerous cases of destitution among the striking miners were relieved.

On August 15th, in the Circuit Court of the United States, injunctions were granted by Judge John J. Jackson, in suits brought by James Sloan, Jr., *vs.* Eugene V. Debs *et al.*, in which the plaintiff, Sloan, sues as a stockholder in the Monongah Coal and Coke Co.; Charles Mackall *vs.* Eugene V. Debs *et al.*, in which the plaintiff, Mackall, sues as a stockholder in the West Fairmont Coal and Coke Co., and Charles Mackall *vs.* M. D. Ratchford *et al.*, in which the plaintiff, Mackall, sues as a stockholder in the Montana Coal and Coke Co.

In these bills, complainants allege, among other things, that the defendants and their associates, were conspiring together to interfere with the operating and conducting of coal mines operated by said companies and by such interference, preventing the employes of said companies from mining and producing coal, in and from said mines and that unless the court granted an immediate restraining order, preventing them from interfering with the employes of said companies, there was great danger of irremediable injury, damage and loss to the owners of said mines.

On the morning of August 17th, the strikers who had been camping a short distance from the Montana mines, marched down the county road, headed by a band and stopped near the entrance to the mines.

United States Deputy Marshal Randolph at once read the order of the court granting a temporary injunction and served seven copies on the leaders.

Owing to an error in the writ, the language could be construed

to allow the strikers to march up and down the road, which they continued to do.

Judge Jackson was wired the situation and the following order was issued:

In the Circuit Court of the United States, District of West Virginia.

JAMES SLOAN, JR.,	}	In Equity.
<i>vs.</i> EUGENE V. DEBS et al.		

and

CHARLES MACKALL	}	In Equity.
<i>vs.</i> EUGENE V. DEBS et al		

and

CHARLES MACKALL	}	In Equity.
<i>vs.</i> M. D. RATCHFORD et al.		

On motion of A. B. Fleming, counsel for plaintiffs in foregoing cases, it is ordered that the Marshal of this District do notify and warn the strikers that marching to and fro through the Company's property at any time in the above cases will be regarded as an effort to intimidate the miners of said companies, and such marching will be considered as a violation of the injunction heretofore awarded in the above cases.

J. J. JACKSON, *U. S. Dist. Judge.*

August 17, 1897.

This order was served on the strikers, who continued to march in defiance of the injunction, whereupon they were placed under arrest and twenty-seven of their number taken to Clarksburg in a special train on the Monongahela River Railroad, by United States Deputy Marshals Law, Randolph, Jackson and Scott, where they were arraigned before Judge Goff in the Federal Court, charged with having violated the injunction issued by Judge Jackson.

The operators were represented by ex-Governor A. B. Fleming and Attorneys W. S. Meredith and U. S. Kendall, of Fairmont.

The strikers were represented by Hon. John J. Davis, of Clarksburg, who made a motion to continue the hearing. Judge Goff overruled the motion and fixed the hearing for the following day, Thursday, August 19th, at 10 a. m.

In making this announcement, the Judge took occasion to say that the charges against the men were not necessarily of a criminal nature. No grand jury had presented them and their hearing was not to be a trial by jury. Probably they were guilty of no

crime. He sincerely hoped they had violated no statute. He said it became the duty of the court, to inquire into these cases that the dignity and majesty of the law might be maintained. In committing the prisoners into the custody of the marshals until the hour for the hearing, the Judge announced that he was ready at any hour during the day or night, to release any or all of the parties under arrest, who would give sufficient assurance for their appearance at court. The taking of evidence in the case was concluded August 20th.

Several strikers were examined by counsel for the defense, all of whom stated that they were only marching in the public highway and meant no disrespect to the court. They claimed it was their honest opinion that they were violating no order of the court, so long as they kept in the county road.

Judge Fleming announced that the prosecution did not care to argue the case, but made a short address, maintaining that the injunction had been violated.

Hon. John Davis, of counsel for the defense, made a most eloquent address in behalf of the strikers.

He said in part:

"We admit that it is not only right, but the duty of this court to enforce its decrees. Whenever the people lose respect for our courts our government has proved itself a gigantic failure. There can be no liberty where there is no law. We do not assert that this corporation must be wrong, because it is a corporation, or that these prisoners must be right because they are workingmen.

We do demand that they shall receive equal justice. These men had marched along the public highway peaceably, had made no threat and had offered no abuse. They had not disturbed the property of the company nor offered violence to any of its employees.

While the court must enforce the law, council could not believe that the law would ever authorize an injunction prohibiting any man or body of men from passing up and down the public highway, when they did so in peace and order."

Hon. W. S. Meredith closed for the prosecution and on Saturday, August 21st, Judge Goff gave his opinion as follows:

In the Circuit Court of the United States for the District of West Virginia, at Clarksburg:

CHARLES MACKALL,	} In Chancery.
<i>vs.</i>	
M. D. RATCHFORD et al.	

In the matter of the contempt proceedings against Patrick Harney, Ed L. Davis, J. L. Higginbotham et al.

Opinion of the Court:

"As to the law applicable to the matter now under consideration counsel have not differed and the Court has no trouble. It is concerning the facts,—what they prove and their proper application to the law involved, that counsel have expressed differences, and the Court is required to decide.

Many matters foreign to the issue now presented have been referred to by counsel and testified about by witnesses, but the Court will exclude them from its consideration. Matters referring to 'free speech,' 'natural rights,' and the 'liberty of the citizen' are not now involved in this issue nor are they in danger. They will survive this ordeal, and it is to be hoped that they will be further endeared to us all (if that be possible) by our mutual experience herein and the incidents connected therewith. The right of free speech has not been abridged nor in any manner interfered with. 'The organizer' has spoken to his heart's content here, there and everywhere. The 'camp' has heard him and been electrified by his eloquence. City, town and hamlet have been visited by him and have given him generous welcome. Public buildings have been thrown open, street corners utilized, the cross roads and highways called into requisition. The right of the people to assemble and discuss matters in which they feel an interest has had an exemplification during the last month in this and adjoining States, that has been pleasing to our citizenship, and as gratifying to all true lovers of republican government, as it has been unwelcome and unexpected to the agitator and the demagogue,—who it seems to delight in drawing lurid pictures of the days yet to come. when 'liberty' shall have perished from the face of the earth and 'free speech' shall be but the dim remembrance of a dream long passed, recalling but faintly the days when liberty yet tarried among men and was worshipped by those who called themselves 'freemen.'

The simple question here is are these defendants in contempt of this Court?

"On the 16th inst. this Court granted an injunction restraining the defendants and all others from in any wise interfering with the management, operation and conducting of the mines in the bill mentioned, either by menaces, threats or any character of intimidation used to prevent the employes of said mines from going to or from the same, or from engaging in their usual business of mining. All persons were restrained from entering upon the property of the Montana Coal and Coke Company for the purpose of interfering with the employes of the said Company, either by intimidation or by the holding of either public or private assemblages upon said property, or in any way molesting, interfering with or intimidating the employes of that company so as to induce them to abandon their work in the said mines. This injunction was served on a number of the defendants early on the morning of the 17th inst. It was also served on other of the defendants, together with an additional or supplemental and construing order,

on the morning of the 18th inst. If the defendants were aware that the Court had passed the decree granting the injunction mentioned, if they were aware of its terms and import, and if they then interfered with or intimidated the employes of said coal company, thereby preventing them from going to or from their work, or causing them to abandon the same, then they are guilty of the contempt charged, and should be, must be, and will be punished.

The 'strikers' had the right to quit work themselves and they had the right to induce other miners, by peaceable terms, by the persuasive force of public or private argument exerted in a lawful way to also quit work and join them. But it must be kept in mind that the miner who still desired to work had the same right to do as the miner to quit work, and also it should be remembered the owners of the mines, individual or company, had the right to operate the same; the right to employ the labor of those willing to work; the right to use the highway leading to the mines for themselves and for their employes, even as had the strikers to quit work, the miner to go on with his work, or the agitator to indulge in the right of 'free speech.'

It seems from the evidence that but few of the miners employed at the Montana mines had joined the strikers. All efforts to induce them to do so had apparently failed. At this juncture a company of marching strikers, mostly from Monongah, went into camp about one mile from the Montana mines. During Monday, Tuesday and Wednesday this company, under command of its officers, with music and banners, marched and counter-marched along the county road running through the property of the Montana Coal Company. This marching was very early in the morning and in the afternoon, at times when the miners of said company were either going to or from their work. The marching was from the camp down to the mine opening, then back to the village where the miners lived, thence again past the mine opening, and so on 'to and fro' during certain hours of the morning and afternoon. They did not march past the property of the company for the reason, as stated by their leader, that the river stopped them. The marching was from the camp to the river and from the river back to the camp, always by the mine opening and the miners' homes. There was an object in this and the intent will be disclosed by the facts. These miners had refused to join the strikers and had neglected to attend the strikers' meeting, evidently preferring to remain at work. The camp was established near them for the purpose of influencing them. Was that influence to be exerted and was it exerted in a lawful and proper manner? The answer to that question determines the guilt or innocence of these accused. In endeavoring to influence the miners to join them, did the strikers prevent them from going to or from work, and did they use any character of intimidation in so doing?

A body of men, over two hundred strong, marching in the early hours of the morning, before daylight, halting in front of the mine opening, and taking position on each side of the public high-

way for a distance of at least a quarter of a mile, at the exact places where the miners were in the habit of crossing that highway, for the purpose of going from their homes to their work, is at least unusual, and in the state of excitement usually attending such occasions, neither an aid to fair argument or conducive to the state of mind that makes *willing* converts to the cause thus championed. That the marching did intimidate quite a number of the miners is clear, if the evidence offered is to be believed—and the Court finds it uncontradicted and entitled to credence. The Court is also forced to conclude from all the facts and circumstances detailed by the witnesses, from the object the marching men had in view, and from the locality where they marched and its topography, that the intention of the marching strikers was to interfere with the operation of the Montana mines, with miners engaged in working said mines, to intimidate them and thereby induce them to abandon their work, and then secure their co-operation in closing the mines. The marching men seemed to think that they could go and come on and over the county road as they pleased, because it was a public highway. But this was a mistake. The miners working at Montana had the same right to use the public road as the strikers had, and it was not open and free to their use when it was occupied by over two hundred men stationed along it at intervals of three and five feet, men who, if not enemies, were not bosom friends. That some miners passed through this line is shown; that others feared to do so is plain; that the marching column intended to interfere with the work at the mines, would be foolish to deny.

A highway is a way over which the public at large have a right of passage. It is a road maintained by the public for the general convenience. True, the strikers had a right to march over it as passengers just the same as all other citizens; but they had no right to make it a parade ground or stop on its sideways at frequent intervals and by the hour at times when other people who had the same right to its use were in the habit of using it for purposes connected with their daily avocations. The miners of the Montana mines, as well as the owners of that property, had the same right to use the public road as had the marching strikers. It seems to the court that the men whose work is interrupted and the people whose property is damaged by the improper use and occupation of the highway are the people who have the true grounds of complaint because of the improper use of what, in the early books of the law, is called the 'King's highway.'

The building in which we are now holding this Court is located on the corner of Third and Pike streets, Clarksburg. All the citizens of that town can use those streets for purposes connected with their business. All persons properly deporting themselves can pass along and upon them for all proper business matters, or for the mere purpose of transit and all persons, due regard being had for the public interest and safety, may parade with banners, flags and bands of music along and over said streets at reasonable

times and seasonable hours, provided the same does not prevent the reasonable and seasonable use of said streets by those entitled to the same. If such use should close the business houses along said streets by preventing employes from reaching them, then if such parades were not prevented by the city authorities the owners of the property so affected would be entitled to the aid of the Courts in protecting their rights. No one portion of the community has a right to march along those streets day after day, night after night, and station themselves along them at intervals of three or five feet, for hour after hour, thereby preventing the owners of property located thereon from reaching the same in person or by their clerks or other employes, for purposes connected with their regular business. Under such circumstances the police of the city would either move the column along out of the way of the public business or take into custody the men who, without authority, obstruct the streets and highways. The marching men had then no such right on the county road as they claimed.

That the parties now in custody knew that the injunction had been issued, is not denied—is plain from the evidence. They spoke of it jocularly mostly—now and then resentfully and disrespectfully. Such terms as these passed along the line: 'We are used to papers like that.' 'We will take the consequences.' 'I will eat mine for breakfast.' The officers were careful in explaining its terms, and I may say in beseeching the strikers not to violate them. They told the marchers to march on and pass by if they wished to, but not to march by and countermarch 'to and fro' by the mines, because such marching was prohibited by the Court. But the advice was not heeded, the disregard of the Court's order continued, and the conduct that constituted the violation of the injunction was openly resorted to, and persistently maintained. These defendants are all guilty of the contempt charged. What should the punishment of the Court be? Outside of their conduct in this particular the demeanor of those who so marched has been most commendable. They have indulged in no threats, nor has loud, boisterous or taunting language been used. They have been sober and decent, mindful of their own interests, and with the exception noted, respectful of the rights of others, and observant of requirements of the law. They impress me as thoroughly honest in their claim that they had the right to march and act as they did, because they were on the 'public highway.' In my judgment they were in that particular mistaken, having been badly advised thereto; but nevertheless such belief, honestly entertained by them, deprives their disobedience to the Court's decree of malice, takes the sting out of the contempt found, and suggests a punishment that will be as light as due regard of the proprieties will admit of. The parties have already been in custody for three days. Let them be confined in the jail of Harrison county, West Virginia, for the further period of three days from this date. But let it not be supposed hereafter, now that attention has been called to the matter and the law, that other and

further infractions of the decrees and orders of this Court will be so lightly punished. In this case, for the reasons mentioned, justice has been tempered with mercy, but if with the light of this investigation in their pathway these defendants shall persist in disregarding the decrees of this Court, duly entered in the causes properly before it, then let it be remembered that mercy shown to contempt under such circumstances would be not only a crime but the death of justice."

A conference of organized labor called by the executive board of the United Mine Workers and indorsed by Samuel Gompers, President of the American Federation of Labor, was held August 30, at St. Louis. This conference resulted in the acceptance by the executive board of the miners' organization, of a proposition of the Pittsburg operators, to arbitrate the wage dispute in that district.

This proposition had been rejected by the executive board, on the ground that such action would be prejudicial to the interests of the miners at large and that overtures for the arbitration of the issues of the great wage struggle, could only be considered, when coming from all the operators in the competitive district, including Ohio, Pennsylvania, Indiana, Illinois and West Virginia.

A conference of the executive board of the United Mine Workers and a committee of the Pittsburg operators, was held September 2 at Columbus, Ohio, at which a proposition of the committee, for a uniform mining rate of 65 cents per ton, pending arbitration, was finally accepted by the executive board, subject to the approval of the miners at large, and the following circular, calling for a delegate convention of the striking miners, was issued:

COLUMBUS, OHIO, September 3, 1897.

*To the Mine Workers Who Have Suspended Work in the Different States:*

Greeting:—You are hereby notified that a convention will be held at Columbus, Ohio, at 10 o'clock a. m., on Wednesday, September 8, 1897.

At a conference held at Columbus, Ohio, on September 2 and 3, between the National Executive Board and District Presidents of the United Mine Workers of America and a representative committee of the Pittsburgh district operators, whom we consented to meet only after it became apparent that a national conference of operators and miners could not be convened.

The following propositions were submitted by the representatives of the Pittsburg operators to the executive board and district presidents, as the basis of a settlement to terminate the present strike:



First, the resumption of work at a 64 cent rate of mining. The submitting of the question to a board of arbitration to determine what the price shall be, the maximum to be 69 cents and the minimum to be 60 cents a ton, the price to be effective from the date of resuming work.

Second, a straight price of 65 cents a ton to continue in force until the end of the year, with the additional mutual understanding that a joint meeting of operators and miners shall be held in December, 1897, for the purpose of determining what the rate of mining shall be thereafter.

Your Executive Board and District Presidents, after much deliberation and thorough consideration of the two propositions, do recommend the latter, as in their judgment the best that can be secured, because of the circumstances that are apparent to all who study market conditions since the inauguration of the strike.

You, however, are the court of final adjudication, and must decide for yourselves what your action shall be and when work shall be resumed.

Additional reasons will be given and a full report made of the general situation at the convention. We would further advise that delegates come untrammelled by resolutions, and uninstructed, other than to act in your best interests.

At this time it is deemed advisable for the reason that provisions are made in the uniformity agreement now pending in the Pittsburg district, and which it is expected will be operative in that district on and after January 1, 1898, to arbitrate the question of relative differential between pick and machine mining, which will, we anticipate, do much towards furnishing us with more reliable data on that question than we possess at present and to that extent will be beneficial to us in settling questions as between machine and pick mining."

(Signed.)

NATIONAL EXECUTIVE BOARD  
and DISTRICT PRESIDENTS.

M. D. RATCHFORD,  
*President National Executive Board.*

W. C. PEARCE,  
*Secretary.*

At this convention, a resolution accepting the 65 cent rate offered by a committee of the Pittsburg operators, was passed, September 11, and except in districts where the operators would not concede the advance, the great strike of bituminous coal miners, declared July 4, was at an end.

The resolution adopted was as follows:

"*Resolved*, That we, the miners of Pennsylvania, West Virginia, Ohio, Indiana and Illinois, in convention assembled, do hereby agree to accept the proposition recommended by our national executive committee, viz: 65 cents in Pittsburg district; all

places in above named States, where a relative price can be obtained to resume work and contribute liberally to the miners who do not receive the advance, where fight must be continued to a bitter finish.

*Resolved*, That the national officers, executive board and district presidents act as an advisory board for the purpose of providing ways and means for the carrying on of the strike where necessary, provided, however, that no district resume work for ten days, for the purpose of giving miners in other districts time to confer with their operators and get the price if possible."

One vote was cast by the delegates to the convention for each 100 miners represented, and the resolution passed by a vote of 495 for, to 317 against, the terms of the settlement.

Those voting against settlement, held that their interests were not sufficiently protected and that the proposition violated the repeated assertions of the miners' officials, that no settlement would be made by districts.

Delegates from Illinois voted unanimously against the proposition, which the officials claimed gave them all the protection they could reasonably ask, since it provided for a continuation of the strike wherever the operators refused to grant the advance.

A statement, issued by the executive board to the miners of the country, gave the following reasons for their recommendation of a settlement on the basis proposed:

"That the markets were being supplied; that the suspension was not growing; that miners could not be induced to respond promptly to the needs of the hour, and that those who did respond were fast approaching the point of exhaustion and could not continue to fight much longer. That the supplies were becoming limited, that pressing want could not be appeased, causing a resumption in many cases at the operators' terms. That organized labor was called upon to devote time, men and money to their own affairs and could not reasonably be expected to continue indefinitely to fight our battles. That the sufferings of the hungry men, blameless women and innocent children appealed to us not to continue a struggle where the result would only be disastrous, entailing greater miseries and more hardships.

These conditions were recognized by your executive board and district presidents for some time, were explained to the convention in detail, and are presented to you as further information on the conditions surrounding the controversy.

The following States, Pennsylvania, Ohio and Indiana, will resume work in full and a portion of Illinois at the expiration of the ten day limit by the convention so as to give all districts affected an opportunity to comply with the conditions prescribed

by the convention. If West Virginia and a portion of Illinois will refuse to do so and the fight will have to be continued, your representatives have provided that assessments shall be levied on those working to maintain the idle miners."

The ten day limit was ignored by the delegates from the Pittsburgh district, who protested it was an effort of those voting against settlement to continue the strike and would be disastrous to their interests and at a conference held in Pittsburgh, September 15th, a resolution was passed by them ignoring this clause of the Columbus settlement and authorizing immediate resumption of work at all mines where the operators conceded the rate.

To ascertain the effect and extent of the strike in West Virginia, the following blanks were sent to all operators and secretaries of miners' organizations:

*Blank Sent to Operators.*

STATE OF WEST VIRGINIA,  
OFFICE OF COMMISSIONER OF LABOR.

Wheeling, W. Va., ..... 189

We are making an investigation of the effects of the Miners' strike in West Virginia.

Will you please advise me the extent of the strike among your employes by answering the following questions:

1. Number of Miners employed?.....
2. Number of Miners out during strike?.....
3. Number of Miners who have resumed work?.....
4. Number of Miners who have resumed work at advanced rate?.....
5. Number of Miners who have resumed work at union wage scale?.....
6. General mining rate, prior to strike?.....
7. General mining rate, now being paid?.....

Section 5, Chapter 15, Acts of 1889, provides:

"If any person, or the officers of any company or corporation shall neglect or refuse to answer, within a reasonable time, any proper question propounded to him by the Labor Commissioner;

or if any person, or officers of any company or corporation to whom a list of interrogatories has been furnished, shall neglect or refuse to fully and truthfully answer and return the same, such person or officer of such company or corporation shall be deemed guilty of a misdemeanor. The Commissioner of Labor shall report to the Prosecuting Attorney of the proper county all such violations of this act; whereupon said Prosecuting Attorney shall proceed against the persons guilty."

The information you are requested to give is desired within ten days.

Will you please give the matter immediate attention and return in stamped, addressed envelope enclosed.

Very truly,

I. V. BARTON,  
*Commissioner of Labor.*

*Blank Sent to Miners' Organizations.*

STATE OF WEST VIRGINIA,  
OFFICE OF COMMISSIONER OF LABOR.

Wheeling, W. Va., ..... 189

DEAR SIR:

We are making an investigation of the effect of the Miners' strike in West Virginia.

Will you please advise me the extent of your organization by answering the following questions:

1. Number of miners belonging to your local union? .....
2. Number belonging to your local union prior to strike? .....
3. Number belonging to your local union, unemployed at this time? .....
4. Number belonging to your local union, receiving aid through your organization? .....
5. Name or number of local union? .....
6. Date of organization? .....
7. General mining rate in your district, prior to strike? .....
8. General mining rate in your district, now being paid? .....

Section 5, Chapter 15, Acts of 1889, provides:

"If any person, or the officers of any company or corporation shall neglect or refuse to answer, within a reasonable time, any proper question propounded to him by the Commissioner of

Labor, or if any person, or officers of any company or corporation to whom a list of interrogatories has been furnished, shall neglect or refuse to fully and truthfully answer and return the same, such person or officer of such company or corporation shall be deemed guilty of a misdemeanor. The Commissioner of Labor shall report to the Prosecuting Attorney of the proper county all such violations of this act; whereupon said Prosecuting Attorney shall proceed against the persons guilty."

The information you are requested to give is desired within ten days.

Will you please give the matter immediate attention and return in stamped, addressed envelope enclosed.

Very truly,

I. V. BARTON,  
*Commissioner of Labor.*

Reports were received from 154 operators and 40 miners' organizations and the results of the investigation are shown in the following tables and analysis:

## EXTENT OF THE STRIKE IN WEST VIRGINIA.

## First District, Barbour County.

Number of Operator Reporting.	Number of Miners Employed.	Number Out During Strike.	Number Who Have Resumed Work January 1, 1898.	Number Who Have Resumed Work at Advanced Rate.	Number Who Have Resumed Work at Union Wage Scale.	Mining Rate Paid Prior to Strike—Cents Per Ton.	Mining Rate Paid January 1, 1898.—Cents Per Ton.
1	60	60	54	.....	.....	38	38
2	20	.....	.....	.....	.....	35	35
Total	80	60	54				

## Brooke County.

1	12	12	12	12	12	*.1	*56
2	40	12	12	.....	.....	*55	*55
3	50	50	50	50	50	*60	*65
Total	102	74	74	62	62		

## Harrison County.

1	28	.....	.....	.....	.....	35	35
2	65	65	25	.....	.....	30	30
3	30	.....	.....	.....	.....	23	25
4	37	37	35	.....	.....	30	30
5	10	10	10	.....	.....	28	28
6	200	130	70	.....	.....	35	35
7	20	12	8	.....	.....	35	35
8	40	.....	.....	.....	.....	23	23
Total	430	254	118				

\*Rate for screened coal.

**EXTENT OF THE STRIKE IN WEST VIRGINIA.**  
**First District, Marion County.**

Number of Operator Report- ing.	Num- ber of Miners Em- ployed.	Number Out During Strike.	Number Who Have Resumed Work January 1, 1898.	Number Who Have Resumed Work at Advanced Rate.	Number Who Have Resumed Work at Union Wage Scale.	Mining Rate Paid Prior to Strike— Cents Per Ton.	Mining Rate Paid January 1, 1898— Cents Per Ton.
1	125	.....	.....	.....	.....	32	40
2	80	40	.....	.....	.....	32	35
3	50	28	.....	.....	.....	32	35
4	15	2	2	.....	.....	40	40
5	175	.....	.....	.....	.....	32	40
6	200	.....	.....	.....	.....	35	35
7	325	.....	.....	.....	.....	32	40
8	45	.....	.....	.....	.....	25	30
9	450	250	100	.....	.....	40	35
10	30	30	.....	.....	.....	27	.....
<b>Total</b>	<b>1495</b>	<b>350</b>	<b>102</b>				

**Marshall County.**

1	100	100	100	100	100	*51	*56
2	50	45	45	45	45	*51	*56
3	80	80	80	80	80	*51	*56
4	7	4	4	4	.....	*50	*50
<b>Total</b>	<b>237</b>	<b>229</b>	<b>229</b>	<b>229</b>	<b>225</b>		

**Mineral County.**

1	833	.....	.....	.....	.....	.....	45
2	250	.....	.....	.....	.....	45	45
<b>Total</b>	<b>1103</b>						

\*Rate for screened coal.

## EXTENT OF THE STRIKE IN WEST VIRGINIA.

## First District—Monongalia County.

Number of Operator Report- ing.	Num- ber of Miners Em- ployed.	Number Out During Strike.	Number Who Have Resumed Work January 1, 1898.	Number Who Have Resumed Work at Advanced Rate.	Number Who Have Resumed Work at Union Wage Scale.	Mining Rate Paid Prior to Strike— Cents Per Ton.	Mining Rate Paid January 1, 1898— Cents per Ton.
1	40	.....	.....	.....	.....	27	30
2	50	.....	.....	.....	.....	30	30
3	50	.....	.....	.....	.....	32	35
<b>Total</b>	140						

## Ohio County.

1	20	.....	.....	.....	.....	37	40
2	82	64	32	.....	32	*60	*56
3	7	.....	.....	.....	.....	43	43
4	40	40	40	40	40	*51	*56
5	6	.....	.....	.....	.....	42	42
<b>Total</b>	155	104	72	40	72		

## Preston County.

1	38	38	38	.....	.....	30	30
2	25	20	16	.....	.....	35	35
3	10	.....	.....	.....	.....	35	35
4	100	.....	.....	.....	.....	35	35
<b>Total</b>	173	68	54				

\*Rate for screen coal.



## EXTENT OF THE STRIKE IN WEST VIRGINIA.

## First District—Taylor County.

Number of Operators Reporting.	Number of Miners Employed.	Number Out During Strike.	Number Who Have Resumed Work January 1, 1898.	Number Who Have Resumed Work at Advanced Rate.	Number Who Have Resumed Work at Union Wage Scale.	Mining Rate Paid Prior to Strike—Cents Per Ton.	Mining Rate Paid January 1, 1898—Cents Per Ton.
1	125	125	125	.....	.....	50	30
2	29	.....	.....	.....	.....	30	30
3	97	12	12	.....	.....	30	30
Total	261	137	137				

## Second District—Kanawha County.

1	100	41	41	41	41	*50	*62
2	80	80	80	80	.....	*50	*56
3	12	.....	.....	.....	.....	38	38
4	140	140	140	.....	.....	*62	*56
5	70	50	50	50	.....	*50	*56
6	300	175	175	175	.....	*50	*62
7	167	167	149	149	.....	*50	*56
8	70	70	60	.....	.....	*50	*50
9	70	70	68	.....	.....	30	25
10	32	32	25	.....	.....	*62	*56
11	36	.....	.....	.....	.....	*50	*56
Total	1077	825	788	495	41		

## Mason County.

1	17	17	17	17	.....	40	42
2	125	.....	.....	.....	.....	35	40
3	16	16	16	16	16	40	45
Total	158	33	33	33	16		

\*Rate for screen coal.

## EXTENT OF THE STRIKE IN WEST VIRGINIA.

## Third District, Fayette County.

Number of Operator Report- ing.	Num- ber of Miners Em- ployed.	Number Out During Strike.	Number Who Have Resumed Work January 1, 1898.	Number Who Have Resumed Work at Advanced Rate.	Number Who Have Resumed Work at Union Wage Scale	Mining Rate Paid Prior to Strike— Cents Per Ton.	Mining Rate Paid January 1, 1898— Cents Per Ton.
1	100	.....	.....	.....	.....	30	30
2	150	150	150	.....	.....	40	40
3	150	150	150	.....	.....	40	40
4	140	.....	.....	.....	.....	40	40
5	125	125	125	.....	.....	40	40
6	60	60	60	.....	.....	40	40
7	60	60	60	.....	.....	40	40
8	120	.....	.....	.....	.....	40	40
9	200	.....	.....	.....	.....	40	40
10	60	.....	.....	.....	.....	40	40
11	60	.....	.....	.....	.....	40	40
12	200	200	200	.....	.....	38	38
13	240	.....	.....	.....	.....	30	30
14	140	140	140	.....	.....	35	30
15	60	60	60	.....	.....	30	30
16	182	.....	.....	.....	.....	40	40
17	40	.....	.....	.....	.....	30	30
18	40	40	40	.....	.....	30	30
19	600	46	.....	.....	.....	25	25
20	60	.....	.....	.....	.....	40	40
21	76	.....	.....	.....	.....	40	40
22	150	150	30	.....	.....	30	30
23	200	.....	.....	.....	.....	40	40

EXTENT OF THE STRIKE IN WEST VIRGINIA.

Third District, Fayette County.—*Continued.*

Number of Operator Report- ing.	Num- ber of Miners Em- ployed.	Number Out During Strike.	Number Who Have Resumed Work January 1, 1898.	Number Who Have Resumed Work at Advanced Rate.	Number Who Have Resumed Work at Union Wage Scale.	Mining Rate Paid Prior to Strike— Cents Per Ton.	Mining Rate Paid January 1, 1898— Cents Per Ton.
24	100	100	65	.....	.....	30	30
25	100	45	45	.....	.....	40	40
26	150	.....	.....	.....	.....	40	40
27	103	.....	.....	.....	.....	40	40
28	120	.....	.....	.....	.....	30	30
29	100	100	65	.....	.....	30	30
30	125	20	20	.....	.....	*60	*60
31	110	5	5	.....	.....	40	40
32	300	.....	.....	.....	.....	30	30
33	75	14	14	.....	.....	40	40
34	90	10	10	.....	.....	40	40
35	60	.....	.....	.....	.....	40	40
36	75	3	3	.....	.....	40	40
37	50	.....	.....	.....	.....	40	40
38	30	30	30	.....	.....	40	40
39	80	80	80	.....	.....	40	40
40	150	.....	.....	.....	.....	40	40
41	90	75	.....	.....	.....	38	.....
42	250	.....	.....	.....	.....	40	40
43	115	113	113	.....	.....	*49	*42
44	50	6	.....	.....	.....	30	30
Total	5536	1782	1465				

\*Rate for screen coal.

## EXTENT OF THE STRIKE IN WEST VIRGINIA.

## Third District—Kanawha County.

Number of Operator Reporting.	Number of Miners Employed.	Number Out During Strike.	Number Who Have Resumed Work January 1, 1898.	Number Who Have Resumed Work at Advanced Rate.	Number Who Have Resumed Work at Union Wage Scale.	Mining Rate Paid Prior to Strike—Cents Per Ton.	Mining Rate Paid January 1, 1898—Cents Per Ton.
1	96	72	72	72	.....	*50	*56
2	125	125	100	.....	.....	*62	*56
3	60	60	60	60	.....	*43	*56
4	80	80	80	80	80	*51	*56
5	145	145	130	130	130	*50	*56
6	137	137	132	132	132	*42	*49
7	65	65	65	.....	.....	*62	*56
8	125	.....	.....	.....	.....	*50	*56
9	115	115	115	.....	.....	*62	*56
10	65	50	50	50	.....	*43	*56
11	12	12	12	12	.....	*43	*56
Total	1025	861	816	536	342		

## Raleigh County.

1	100	100	100	.....	.....	40	40
---	-----	-----	-----	-------	-------	----	----

## Fourth District—Mercer County.

1	160	50	50	.....	.....	30	30
2	125	.....	.....	.....	.....	30	30
3	80	65	65	.....	.....	30	30
4	50	.....	.....	.....	.....	30	30
5	50	.....	.....	.....	.....	30	30
6	150	100	100	.....	.....	30	30
7	100	.....	.....	.....	.....	30	30
Total	715	215	215				

\*Rate for screen coal.

## EXTENT OF THE STRIKE IN WEST VIRGINIA.

## Fourth District—Mingo County.

Number of Operator Report- ing.	Num- ber of Miners Em- ployed.	Number Out During Strike.	Number Who Have Resumed Work January 1, 1898.	Number Who Have Resumed Work at Advanced Rate.	Number Who Have Resumed Work at Union Wage Scale.	Mining Rate Paid Prior to Strike— Cents Per Ton.	Mining Rate Paid January 1, 1898— Cents Per Ton.
1	45	.....	.....	.....	.....	*55	*55
2	84	60	60	.....	.....	32	32
3	80	.....	.....	.....	.....	29	29
4	10	7	7	7	.....	*55	*60
5	55	.....	.....	.....	.....	*50	*55
6	35	.....	.....	.....	.....	*55	*55
7	75	.....	.....	.....	.....	*60	*60
8	28	.....	.....	.....	.....	30	30
9	55	.....	.....	.....	.....	*55	*55
10	15	.....	.....	.....	.....	25	28
<b>Total</b>	<b>482</b>	<b>67</b>	<b>67</b>	<b>7</b>			

## McDowell County.

1	48	48	48	.....	.....	30	30
2	80	.....	.....	.....	.....	30	30
3	65	.....	.....	.....	.....	30	30
4	90	.....	.....	.....	.....	32	32
5	60	.....	.....	.....	.....	30	30
6	90	.....	.....	.....	.....	30	30
7	80	40	40	.....	.....	30	30
8	60	.....	.....	.....	.....	30	30
9	107	.....	.....	.....	.....	30	30
10	60	.....	.....	.....	.....	30	30

\*Rate for screen coal.

## EXTENT OF THE STRIKE IN WEST VIRGINIA.

Fourth District—McDowell County—*Continued.*

Number of Operators Report ing.	Num- ber of Miners Em- ployed.	Number Out During Strike.	Number Who Have Resumed Work January 1, 1898.	Number Who Have Resumed Work at Advanced Rate.	Number Who Have Resumed Work at Union Wage Scale.	Mining Rate Paid Prior to Strike— Cents Per Ton.	Mining Rate Paid January 1, 1898— Cents Per Ton.
11	55	.....	.....	.....	.....	33	33
12	150	12	.....	.....	.....	30	30
13	60	.....	.....	.....	.....	30	30
14	65	25	25	.....	.....	30	30
15	125	.....	.....	.....	.....	30	30
16	80	.....	.....	.....	.....	30	30
17	100	.....	.....	.....	.....	30	20
18	55	.....	.....	.....	.....	30	30
19	80	80	80	.....	.....	30	30
20	80	.....	.....	.....	.....	30	30
21	125	.....	.....	.....	.....	30	30
22	60	60	60	.....	.....	24	24
23	60	.....	.....	.....	.....	30	30
24	45	.....	.....	.....	.....	30	30
Total	1880	265	253				

## EXTENT OF THE STRIKE IN WEST VIRGINIA.

## First District.

Where Located.	Number of Operators Reporting.	Number of Miners Employed.	Number Out During Strike.	Number Who Have Resumed Work January 1, 1898.	Number Who Have Resumed Work at Advanced Rate.	Number Who Have Resumed Work at Union Wage Scale.
Barbour county.....	2	80	60	54	.....	.....
Brooke county.....	3	102	74	74	62	62
Harrison county.....	8	430	254	148	.....	.....
Marion county.....	10	1495	350	102	.....	.....
Marshall county.....	4	237	229	229	229	225
Mineral county.....	2	1103	.....	.....	.....	.....
Monongalia county.....	3	140	.....	.....	.....	.....
Ohio county.....	5	155	104	72	40	72
Preston county.....	4	173	58	54	.....	.....
Taylor county.....	3	261	137	137	.....	.....
<b>Total.....</b>	<b>44</b>	<b>4176</b>	<b>1266</b>	<b>870</b>	<b>331</b>	<b>359</b>

## Second District.

Kanawha county.....	11	1077	825	788	495	41
Mason county.....	3	158	33	33	33	16
<b>Total.....</b>	<b>14</b>	<b>1235</b>	<b>858</b>	<b>821</b>	<b>528</b>	<b>57</b>

## Third District.

Fayette county.....	44	5536	1782	1465	.....	.....
Kanawha county.....	11	1025	861	816	536	342
<b>Total.....</b>	<b>55</b>	<b>6561</b>	<b>2643</b>	<b>2281</b>	<b>536</b>	<b>342</b>

## EXTENT OF THE STRIKE IN WEST VIRGINIA.

## Fourth District.

Where Located.	Number of Operators Reporting.	Number of Miners Employed.	Number Out During Strike.	Number Who Have Resumed Work January 1, 1893.	Number Who Have Resumed Work at Advanced Rate.	Number Who Have Resumed Work at Union Wage Scale.
Mercer county.....	7	715	215	215	.....	.....
Mingo county.....	10	482	67	67	7	.....
McDowell county.....	24	1880	265	253	.....	.....
Total.....	41	3077	547	535	7	

## THE STATE.

FIRST DISTRICT.....	44	4176	1206	870	331	359
SECOND DISTRICT.....	14	1235	858	821	528	57
THIRD DISTRICT.....	55	6561	2643	2281	536	342
FOURTH DISTRICT.....	41	3077	547	535	7	.....
Total.....	154	15049	5314	4507	1402	758



*Local Union, United Mine Workers of America in West Virginia, Date of Organization, Number of Organized Miners Prior to Strike, Number of Organized Miners and Number of Organized Miners Unemployed January 1, 1898.*

Where Located.	NAME AND DATE OF ORGANIZATION.	Number miners belonging to Union January 1, 1898.	Number belonging to Union prior to the Strike.	Number belonging to Union Unemployed January 1, 1898.
Astor .....	Local Union No 159 Org. Aug. 17, '97.	27	...	27
Austin .....	" " No. 113 " Aug. 10, '97.	28	...	...
Benwood .....	" " No. 788 " July 20, '94.	40	40	40
Buery .....	" " No. 988 "	30	...	...
Cannelton.....	" " No. 131 " July 28, '97.	140	...	...
Clarksburg ....	" " No. 72 " July 26, '97.	251	...	75
Coalburg.....	" " No. 182 " Aug. 5, '97.	130	...	...
Crown Hill....	" " No. 404 " July 15, '97.	51	...	...
Eastbank.....	" " No. 326 " July 18, '97.	42	...	...
Eagle.....	" " No. 176 " July 30, '97.	100	35	4
Edgewater.....	" " No. 231 " Aug. 7, '97.	175	...	1
Flemington ...	" " No. 887 " Nov. 12, '95.	85	20	26
Hartford City	" " No. 219 " Oct. 2, '97.	35	...	6
Handley .....	" " No. 136 " July 15, '97.	170	...	...
Hanwood.....	" " No. 145 " Aug. 15, '97	36	...	35
Malden .....	" " No. 175 " Aug. 20, '97.	175	...	...
Mammoth.....	" " No. 211 " Aug. 12, '97.	200	...	...
Montgomery..	" " No. 117 " Aug. 7, '97.	263	...	263
Montgomery..	" " No. 147 " July 16, '97.	170	...	170
Montgomery..	" " No. 115 " Aug. 15, '97.	175	...	...
Monarch.....	" " No. 271 " Aug. 10, '97.	77	...	55
Moundsville..	" " No. 476 " Sept. 2, '97.	70	...	...
Mount Carbon	" " No. 150 " Aug. 23, '97.	203	...	6

*Local Union, United Mine Workers of America in West Virginia, Date of Organization, Number of Organized Miners Prior to Strike, Number of Organized Miners and Number of Organized Miners Unemployed January 1, 1898.*

Where Located.	NAME AND DATE OF ORGANIZATION.	Number of Miners belonging to Union January 1, 1898.	Number belonging to Union prior to the Strike.	Number belonging to Union Unemploy- ed January 1, 1898.
New Haven...	Local Union No. 451 Org. Nov. 25, '97.	47	...	45
Palatine.....	" " No. 64 " July 22, '97.	135	...	...
Powellton .....	" " No. 149 " Aug. 28, '97.	82	...	...
Riverside.....	" " No. 158 " Aug. 27, '97.	76	...	...
Ronda.....	" " No. 437 " Aug. 10, '97.	94	...	94
Sewell.....	" " No. 984 " Aug. 25,	16	16	...
Simpson .....	" " No. 269 " Nov. 14, '97.	14	...	14
Standard .....	" " No. 829 " July 1, '94.	22	20	...
Tunnelton.....	" " No. 124 " Aug. 9, '97.	35	...	...
Tyrconnel.....	" " No. 318 " Oct. 27, '97.	40	...	25
Watson.....	" " No. 90 " July '97.	50	...	20
Wilsonburg ...	" " No. 97 " July 25, '97.	36	...	18
Winifrede.....	" " No. 179 " Aug. 10, '97.	140	...	18
Wheeling.....	" " No. 146 " '84	50	40	15
Wheeling.....	" " No. 289 " Aug. '97.	53	...	...
Wheeling .....	" " No. 969 " Sept. 8, '95.	40	35	...
Worthing.....	" " No. 89 " Aug. 9, '97.	80	...	40
Total.....	40 Organizations reporting.	3683	206	997

## EXTENT OF THE STRIKE.

## OF BITUMINOUS COAL MINERS, 1897, IN WEST VIRGINIA.

## SUMMARY.

Subject.	First District.	Second District.	Third District.	Fourth District.	The State.
Number of operators reporting	44	14	55	41	154
Number of miners employed...	4176	1235	6561	3077	15049
Number of miners out during strike .....	1266	858	2643	547	5314
Number who have resumed work January 1, 1898.....	870	821	2281	535	4507
Number who have resumed work, at advanced rate.....	331	528	536	7	1402
Number who have resumed work, at union wage scale....	359	57	342	.....	758
Number of miners reported organized January 1, 1898.....	.....	.....	.....	.....	3683
Number of miners reported organized, prior to strike.....	.....	.....	.....	.....	206
Number organized miners re- ported unemployed Jan. 1, '98	.....	.....	.....	.....	997
Number Local Unions, United Mine Workers of America, prior to strike.....	.....	.....	.....	.....	6
Number Local Unions, United Mine Workers of America, reported January 1, 1898.....	.....	.....	.....	.....	40

EXTENT OF THE STRIKE  
OF BITUMINOUS COAL MINERS, 1897, IN WEST VIRGINIA.

*Analysis.*

Showing number of operators reporting, number of miners employed, number out during strike, number who have resumed work, January 1, 1898, number who have resumed work at advanced rate and number who have resumed work at union wage scale, by counties and by mining districts and number of miners in West Virginia, reported organized, January 1, 1898, number reported organized prior to strike, number organized miners reported unemployed, January 1, 1898, number Local Unions, United Mine Workers of America, prior to strike and number Local Unions, United Mine Workers of America, reported January 1, 1898.

FIRST DISTRICT.

Barbour county:

Two operators report 80 miners employed; 60 out during strike; 54 who have resumed work, January 1, 1898.

Brooke county:

Three operators report 102 miners employed; 74 out during strike; 74 who have resumed work, January 1, 1898; 62 who have resumed at advanced rate and 62 who have resumed at union wage scale.

Harrison county:

Eight operators report 430 miners employed; 254 out during strike; 148 who have resumed work, January 1, 1898.

Marion county:

Ten operators report 1495 miners employed; 350 out during strike; 102 who have resumed work, January 1, 1898.

Marshall county:

Four operators report 237 miners employed; 229 out during strike; 229 who have resumed work, January 1, 1898; 229 who have resumed at advanced rate and 225 who have resumed at union wage scale.

**Mineral county:**

Two operators report 1103 miners employed, with no strike among employees.

**Monongalia county:**

Three operators report 140 miners employed, with no strike among employees.

**Ohio county:**

Five operators report 155 miners employed; 104 out during strike; 72 who have resumed work, January 1, 1898; 40 who have resumed at advanced rate, and 72 who have resumed at union wage scale.

**Preston county:**

Four operators report 173 miners employed; 58 out during strike; 54 who have resumed work January 1, 1898.

**Taylor county:**

Three operators report 261 miners employed; 137 out during strike; 137 who have resumed work, January 1, 1898.

**SECOND DISTRICT.****Kanawha county:**

Eleven operators report 1077 miners employed; 825 out during strike; 788 who have resumed work, January 1, 1898; 495 who have resumed at an advanced rate, and 41 who have resumed at union wage scale.

**Mason county:**

Three operators report 158 miners employed; 33 out during strike; 33 who have resumed work, January 1, 1898; 33 who have resumed at an advanced rate, and 16 who have resumed at union wage scale.

**THIRD DISTRICT.****Fayette county:**

Forty-four operators report 5586 miners employed; 1782 out during strike; 1465 who have resumed work, January 1, 1898.

**Kanawha county:**

Eleven operators report 1025 miners employed; 861 out during strike; 816 who have resumed work, January 1, 1898; 536 who

have resumed at an advanced rate, and 342 who have resumed at union wage scale.

#### FOURTH DISTRICT.

Mercer county:

Seven operators report 715 miners employed; 215 out during strike; 215 who have resumed work, January 1, 1898.

Mingo county:

Ten operators report 482 miners employed; 67 out during strike; 67 who have resumed work, January 1, 1898; 7 who have resumed at an advanced rate.

McDowell county:

Twenty-four operators report 1880 miners employed; 265 out during strike; 258 who have resumed work, January 1, 1898.

#### FIRST DISTRICT.

Forty-four operators in the First District report 4176 miners employed; 1266 out during strike; 870 who have resumed work, January 1, 1898; 881 who have resumed at an advanced rate, and 359 who have resumed at union wage scale.

#### SECOND DISTRICT.

Fourteen operators in the Second District report 1285 miners employed; 858 out during strike; 821 who have resumed work, January 1, 1898; 528 who have resumed at an advanced rate; 57 who have resumed at union wage scale.

#### THIRD DISTRICT.

Fifty-five operators in the Third District report 6561 miners employed; 2643 out during strike; 2281 who have resumed work, January 1, 1898; 586 who have resumed at an advanced rate; 342 who have resumed at union wage scale.

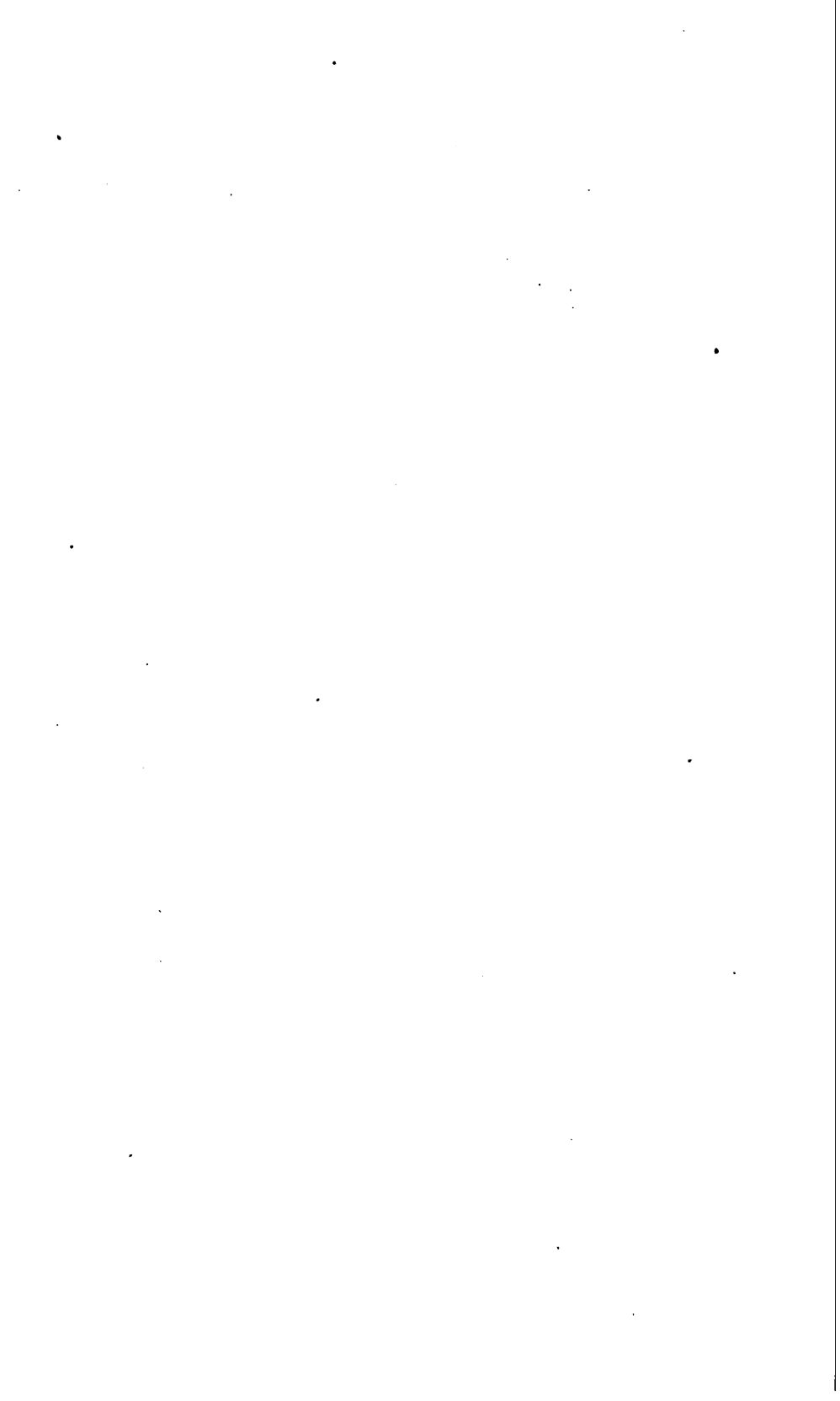
#### FOURTH DISTRICT.

Forty-one operators in the Fourth District report 8077 miners employed; 547 out during strike; 535 who have resumed work, January 1, 1898, and 7 who have resumed at an advanced rate.

## THE STATE.

One hundred and fifty-four operators report 15049 miners employed; 5314 out during strike; 4507 who have resumed work, January 1, 1898; 1402 who have resumed at an advanced rate, and 758 who have resumed at union wage scale.

Forty Local Unions, United Mine Workers of America, report 3683 organized miners in West Virginia, January 1, 1898; 6 Local Unions report a membership of 206 prior to strike; 997 of the total membership of 40 Local Unions, report unemployed, January 1, 1898.

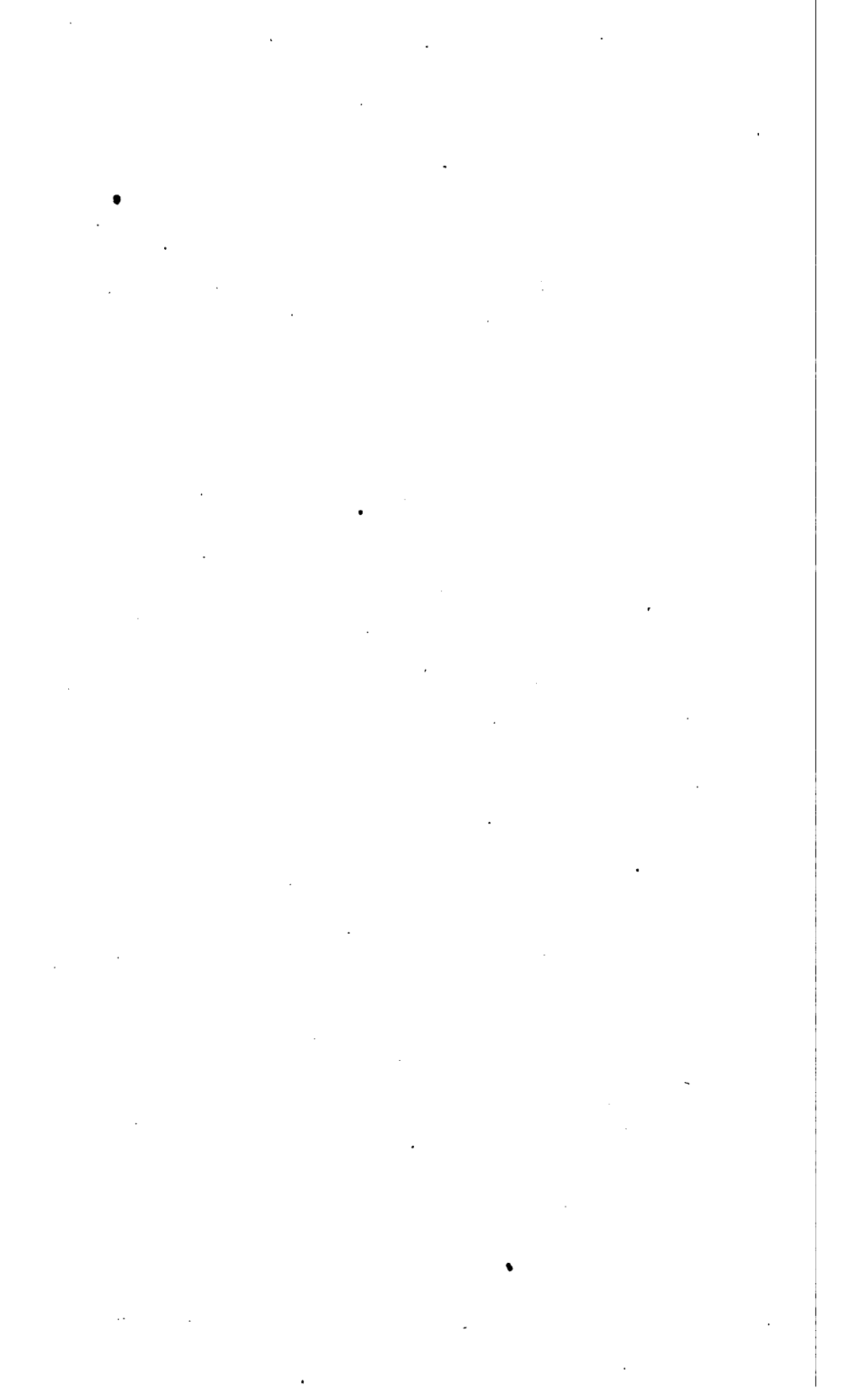




### **PART III.**

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RESOURCES AND ADVANTAGES OF WEST  
VIRGINIA.



## PREFACE.

To secure the information desired relative to local conditions, resources and products, the following letter together with a list of fifty questions, was sent to a number of well informed citizens in each county:

STATE OF WEST VIRGINIA,  
OFFICE OF COMMISSIONER OF LABOR.

Wheeling, W. Va., .....189..

DEAR SIR:

I hand you herewith schedule of an investigation of the Resources and Advantages of the State of West Virginia.

Will you please carefully answer the questions asked, giving the conditions in your county and vicinity and return to me in the stamped, addressed envelope enclosed.

Should you not be able to answer the questions relative to agricultural conditions and products, will you kindly fill out the other inquiries of the schedule and forward to me with the address of one or two well informed farmers in the county whom you think could give the information desired.

Section 5, Chapter 15, Acts of 1889, provides:

"If any person, or the officers of any company or corporation shall neglect or refuse to answer, within a reasonable time, any proper question propounded to him by the Commissioner of Labor; or if any person, or officers of any company or corporation to whom a list of interrogatories has been furnished, shall neglect or refuse to fully and truthfully answer and return the same, such person or officer of such company or corporation shall be deemed guilty of a misdemeanor. The Commissioner of Labor shall report to the Prosecuting Attorney of the proper county all such violations of this act whereupon said Prosecuting Attorney shall proceed against the persons guilty."

The information you are asked to give must be reliable to make this report of value.

Kindly answer for your county in your vicinity only.

I trust it may be your pleasure to give the matter prompt and careful attention.

Very truly,

I. V. BARTON,  
*Commissioner of Labor.*

This report is a synopsis of these individual reports and it is believed that the information given concerning conditions in the 55 counties of West Virginia, is substantially complete and correct.

To those reporting conditions of their county, to Mr. Wm. M. Steuart, of the Department of Labor, Washington, D. C., and to Geo. W. Summers, B. Ph., of the Charleston Daily Gazette, this expression of my sincere thanks is due.

I. V. BARTON,  
*Commissioner of Labor.*

## RESOURCES AND ADVANTAGES OF WEST VIRGINIA.

West Virginia is not a little Mountain State.

It is three times as large as Massachusetts, twice as large as Maryland and as large as Connecticut, Rhode Island, Delaware, New Jersey and Vermont combined.

It is a great store-house of natural wealth, the richest in fuel resources of any State in the Union.

It has 16,000 square miles of coal, more than 80 per cent. of the total bituminous areas of Ohio and Pennsylvania combined, 60 per cent. more than Pennsylvania alone and 2,000 square miles more than Kentucky and Tennessee combined.

The Sixteenth Annual Report of the United States Geological Survey, Part IV., Mineral Resources of the United States, says of the coal fields of West Virginia:

“The area underlaid by coal is about two-thirds of the total area of the State.

The eastern boundary begins at the south, on the mountains just east of the Bluestone river, and proceeds thence to Little Sewell Mountain, on the top of which the lowest seam of the lowest coal measures may be seen; thence, but not by a very clearly defined line with the common boundary of Nicholas and Greenbrier and Webster and Pocahontas counties to Rich Mountain, in Randolph county; following this last named ridge to Laurel Mountain, the dividing line between Upshur county on the west and Randolph and Barbour counties on the east; and thence with the Briery Mountain into Preston county, and so on to the Pennsylvania State line. To the east of this boundary there are small outlying patches of coal, as in Greenbrier county, in Meadow Mountain, and possibly in Pocahontas county and in some of the synclinal valleys of Tucker county; but these patches are unimportant as compared to the vast area to the west, and but in few instances will they yield coal of any value except for local use. This statement will not, however, apply to the small area in Mineral and Grant counties, which is entirely separated by sub-carboniferous outcrops from the main West Virginia coal field. In every county west of this general eastern boundary to the Ohio river will valuable coal be found, if not outcropping in the hills,

then below the surface and accessible by shafting so that out of the fifty-five counties in the State only Monroe, Pendleton, Hardy, Hampshire, Morgan and Jefferson counties may be considered as lacking in workable coal beds."

West Virginia has more than 16,000 square miles of virgin forest and the largest body of hardwood timber in the United States; has the largest gas field in the world; vast pools of petroleum; immense quantities of iron ore, limestone, sandstone and clays.

Nearly every valuable mineral deposit of every country, excepting gold and silver, is found within her borders.

Her soil is rich and gives a generous yield to agricultural products. Its adaptability to grazing is not exceeded by any other section of country, the number of acres indigenous to blue grass are not exceeded by any other State, in proportion to the area. In 1863 a single line of railroad passed through a few of the northern counties of the State, today there are more than 2,075 miles of railroad and the iron arteries of trade pierce the confines of them all.

In 1863, a few small coal mines produced some little coal for domestic consumption only.

In 1873, the product was 672,000 short tons; in 1883, it was 2,335,833; in 1893, it was 10,708,578 short tons and added nearly another million tons increase, in the product for 1894.

The production of coal for the year ending June 30, 1897, reported by the Chief Mine Inspector, was 13,110,528 short tons, valued at \$8,220,301.

One million three hundred and fifty-one thousand nine hundred and twenty-five tons of coke were manufactured, valued at \$1,689,906; 221 coal mines and 8,405 ovens were operated and 21,182 men employed.

The following is an extract from "Production of Coal in West Virginia" by Mr. Edward W. Parker, of the United States Geological Survey:

"In 1882 West Virginia ranked fifth in importance among the coal producing States, and held that position until 1886, when she took fourth place. At this time she produced only about one-half as much as Ohio, the third in rank. The ratio of increase in the two States did not vary much until 1889, when West Virginia's product amounted to more than 60 per cent. that of Ohio; in 1891 it was more than 70 per cent.; in 1893 it was more than 80 per cent., and in 1894 the product of Ohio was less than 3 per cent., larger than West Virginia."

The Eighteenth Annual Report of the Survey, Part V., Mineral Resources of the United States, says of the production of coal in West Virginia, in 1896:

“West Virginia recovered from her decreased output in 1895 with an increase in 1896 of 1,488,335 short tons, and reached the highest figure yet attained. More than this, the increased output in 1896 puts West Virginia third in the rank of coal-producing States—her product in 1896 being about 1,000 tons more than Ohio, which State is thus supplanted.

The amount of coal made into coke in Fayette county increased from 546,458 tons to 611,365 tons; in McDowell county from 717,197 tons to 1,002,427 tons; in Mercer county from 134,394 tons to 262,034 tons, and in Tucker county from 186,609 tons to 275,676 tons.”

The following tables give the details of production in the last two years and the annual output of the State since 1873:

*Coal Product of West Virginia in 1895, by Counties.*

COUNTY.	Number of Mines.	Loaded at Mines for Shipment.	Sold to Local Trade and Used by Employees.	Used at Mines for Steam and Heat.	Made into Coke.	Total Product.	Total Value.	Average Price per Ton.	Average number of Days Active.	Average Number of Employees.
		Short tons.	Short tons.	Short tons.	Short tons.	Short tons.				
Barbour .....	2	12,746	560			13,306	\$ 10,686	\$ 0.80	222	20
Brooke .....	3	64,039	10,652	150		74,841	54,167	.72	212	126
Fayette .....	50	2,628,666	73,300	16,401	546,458	3,264,825	2,355,492	.72	201	5,537
Harrison .....	10	263,164	2,269	318	26,942	292,693	196,119	.67	212	518
Kanawha .....	26	1,070,300	32,582	5,468	26,448	1,134,798	894,810	.70	161	2,738
Marion .....	11	916,407	10,717	13,531	316,908	1,257,563	805,901	.64	238	1,812
Marshall .....	4	177,992	15,695	390		194,077	130,661	.67	232	386
Mason .....	6	78,903	40,086	1,777		120,766	102,988	.85	167	367
McDowell .....	29	1,657,802	13,797	6,569	717,197	2,395,365	1,393,428	.55	199	3,955
Mercer .....	8	547,118	3,850	1,992	134,394	687,364	387,578	.56	169	1,148
Mineral .....	6	667,526	7,777	297		675,610	424,643	.63	229	656
Monongalia .....	2	42,949	668	668	23,225	67,510	51,941	.77	200	135
Ohio .....	9	67,921	101,448	465		169,834	128,380	.76	227	221
Preston .....	4	60,716	954	583	44,800	107,053	70,000	.65	225	208
Putnam .....	4	120,332	150			120,482	114,394	.95	112	438
Taylor .....	3	81,303	794	49	11,106	93,252	51,512	.55	159	180
Tucker .....	5	286,387	3,058	1,937	186,609	419,991	305,962	.68	188	488
Wayne .....	3	3,833				3,833	7,755	2.03	82	26
Grant, Logan, Mingo, Ra- leigh, and Randolph .....	5	138,142	1,656			139,798	99,728	.71	173	255
Small mines .....			125,000			125,000	125,000			
Total .....	190	8,858,256	445,023	50,595	2,034,087	11,387,961	7,710,575	.68	195	19,159



*Coal Product of West Virginia in 1896, by Counties.*

COUNTY.	Number of Mines.	Loaded at Mines for Shipment.	Sold to Local Trade and Used by Employees.	Used at Mines for Steam and Heat.	Made into Coke.	Total Product.	Total Value.	Average Price per Ton.	Average Number of Days Active.	Average Number of Employees.
		Short tons.	Short tons.	Short tons.	Short tons.	Short tons.				
Barbour .....	2	22,915	1,149			24,064	\$ 16,018	\$ 0.67	250	42
Brooke .....	3	32,085	11,239	100		48,424	31,488	.73	151	105
Fayette .....	52	2,879,275	29,764	13,168	611,865	3,583,572	2,408,457	.68	185	5,947
Grant .....	2	8,548	172			8,720	13,080	1.50	160	31
Harrison .....	8	212,932	8,673	600	9,482	231,687	134,181	.58	201	467
Kanawha .....	28	1,058,768	27,542	6,133	24,442	1,116,883	791,468	.71	175	2,314
Marion .....	11	1,201,265	8,724	12,841	289,078	1,511,903	863,766	.57	248	1,899
Marshall .....	4	169,107	11,352	1,151		181,610	122,526	.67	224	254
Mason .....	3	55,875	42,873	1,888		100,186	82,964	.83	228	249
McDowell .....	28	1,968,060	11,169	7,030	1,002,427	2,888,686	1,702,742	.60	221	3,557
Mercer .....	7	667,195	6,181	3,672	262,084	939,082	556,146	.59	202	1,110
Mineral .....	4	549,476	2,995	4,115		556,586	878,188	.68	188	644
Mingo .....	7	209,546	2,047			211,598	187,099	.65	199	350
Monongalia .....	2	35,902	224	101	7,070	48,297	19,874	.45	128	74
Ohio .....	8	81,045	35,640	783	16,057	133,525	93,822	.70	180	204
Preston .....	3	7,729	95,363	2,323	34,344	139,759	83,554	.60	266	180
Putnam .....	4	185,528	800	125		185,953	192,557	1.04	201	384
Taylor .....	4	122,647	707			123,354	63,157	.51	83	310
Tucker .....	6	407,768	2,919	2,063	275,676	688,426	452,257	.66	234	812
Raleigh .....	3	67,389	2,908	302	23,437	94,036	73,891	.78	185	145
Wayne .....										
Small mines .....			125,000			125,000	125,000			
Total .....	189	9,838,053	426,441	56,395	2,555,407	12,876,296	8,336,685	.65	201	19,078

*Coal Product of West Virginia Since 1873.*

Year.	Short Tons.	Year.	Short Tons.
1873.....	672,000	1885.....	3,369,062
1874.....	1,120,000	1886.....	4,005,796
1875.....	1,120,000	1887.....	4,881,620
1876.....	896,000	1888.....	5,498,800
1877.....	1,120,000	1889.....	6,231,880
1878.....	1,120,000	1890.....	7,394,654
1879.....	1,400,000	1891.....	9,220,665
1880.....	1,568,000	1892.....	9,738,755
1881.....	1,680,000	1893.....	10,708,578
1882.....	2,240,000	1894.....	11,627,757
1883.....	2,335,833	1895.....	11,387,961
1884.....	3,360,000	1896.....	12,876,296

The timbering and lumbering industries of West Virginia employ more than fifteen thousand men and the total output of West Virginia lumber runs into hundreds of millions of feet annually.

Her forests each year furnish more than 50,000,000 feet of lumber in logs to the mills along the Ohio; more than 125,000,000 feet of poplar; 75,000,000 feet hardwood; 50,000,000 feet spruce; together with many million feet of soft and hard pine, are produced annually and lumber is shipped to every country in the world.

One mill at Ronceverte, on the Greenbrier river, established at a cost of more than \$100,000, has a capacity for cutting more than 40,000,000 feet of lumber a year.

Another, located at Camden-on-Gauley, the terminus of the West Virginia and Pittsburg Railroad, established a few years ago at a cost of nearly \$100,000, has an annual cutting capacity of more than 30,000,000 feet.

It is said West Virginia has more than 50,000 acres covered with spruce timber and it had been estimated by expert lumber men, that a considerable portion of this area will average nearly 20,000,000 feet of merchantable lumber to the acre.

West Virginia abounds in rich deposits of iron ore, which have not yet attracted general attention.

Fine workable veins of red fossil, red shale, red and brown hemetite, and pipe ores which are equal in quantity and quality to the ores of East Tennessee, are found in mountain ranges of considerable extent in the counties of Greenbrier, Pocahontas, and Pendleton.

Deposits of iron ore of considerable extent and good quality are found in the mountain ranges of the North and South Branches of the Potomac in the counties of West Virginia bordering on the old State, also rich deposits are said to exist on Elk river, a branch of the Great Kanawha.

The production of petroleum in West Virginia, 492,578 barrels in 1890, increased to 2,406,218 barrels in 1891; 3,810,086 barrels in 1892; 8,445,412 barrels in 1893; 8,577,624 barrels in 1894; 8,120,125 barrels in 1895; 10,019,770 barrels in 1896.

The Oil City Derrick, the organ of oil, in its review of the year 1897, says:

"West Virginia seems destined to continue the scene of greatest activity and furnish the only territory that is attractive to operators on a low market.

A single pool, that of Elk Fork, in Tyler county, monopolized the attention of the trade and proved by far the most remarkable development of the year.

The Mountain State moved to the front rank with operations and new productions during the year. Active developments were confined to no one locality, but were very general in no fewer than nine counties."

The following table shows,

*Total Production of Crude Petroleum in West Virginia, by Months, from 1890 to 1896.*

Month.	1890.	1891.	1892.	1893.	1894.	1895.	1896.
January .....	38,614	48,902	195,512	577,933	838,400	647,220	757,574
February .....	38,061	123,841	186,455	468,794	684,532	541,511	729,229
March .....	44,842	229,966	185,468	630,877	754,398	642,222	785,261
April .....	32,804	226,020	181,708	594,190	688,458	646,862	799,509
May .....	39,160	232,076	206,142	705,714	742,701	670,330	855,699
June .....	35,610	223,734	261,900	682,010	699,498	621,733	853,224
July .....	34,096	221,127	328,485	724,491	767,728	742,326	843,872
August .....	31,505	238,451	411,114	843,706	717,844	734,517	874,595
September .....	50,342	219,528	420,882	847,558	674,791	717,170	876,308
October .....	46,387	229,076	451,157	792,719	694,187	713,138	884,716
November .....	45,062	207,477	467,446	757,170	654,887	721,411	851,488
December .....	49,065	215,020	513,817	820,217	630,200	721,685	908,295
Total .....	492,578	2,406,218	3,810,086	8,445,412	8,577,624	8,120,125	10,019,770

Governor Atkinson, in an address, West Virginia Day, October 20, 1897, at the Tennessee Centennial, Nashville, thus eloquently described the activity of his State:

"We are in the business of doing something ourselves. We are digging coal at a mighty rate. The familiar clicks of the miners' picks are heard in many of our mountain sides as they bring forth the dusky diamonds which bring millions of dollars within our borders every year. The hum of our mill-saw lulls our mountaineers to sleep, and awakes them from their slumbers at the dawn of morn. The derricks in our oil fields are almost as thick as the warts on the heads of your Tennessee frogs. We are pumping oil in sufficient quantities out of our West Virginia hills to grease all the axles on the earth, and have enough left to lubricate the North Pole, and every politicians' jaw from Maine to California."

Development is bringing to the markets of the world the hidden resources of the Mountain State.

The population is rapidly increasing and in every way the State is rapidly forging to the front.

Manufacturing is growing in extent and variety and we stand upon the threshold of a new era of prosperity, which will cause the State to grow in people and in wealth, in the variety of its products and in all that goes to make a State great and prosperous.

#### FACTS AND FIGURES.

Area, 24,645 square miles; population, 1890, 762,794.

More than 25 per cent. of total population attend the public schools, only four other States do as well.

Per cent. of illiteracy, 1890, 14.4; average in the United States, 12.4 per cent.

Number of county schools, 1896, 5,621; number of teachers, 6,454; number of pupils, 215,692; value of school houses and school property, \$3,227,141.

Only one State, Iowa, has a smaller number of prisoners according to its population.

72,773 farms of 10,321,326 acres are valued at \$151,880,300.

56.55 per cent. of the people own their homes and farms.

349,016 acres of land produced, 1890, 3,634,197 bu. of wheat.

592,763	"	"	"	"	13,780,506	"	"	corn.
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180,815	"	"	"	"	2,946,653	"	"	oats.
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14,962	"	"	"	"	117,113	"	"	rye.
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In 1890, live stock was valued at \$23,964,610, and farm products at \$20,489,000.

In 1890, 550,645 tons of hay were harvested by West Virginia farmers; they also produced in that year:

- 2,602,021 pounds of tobacco.
- 1,987,367 bushels of Irish potatoes.
- 109,385 bushels of sweet potatoes.
- 4,489,978 bushels of apples.
- 376,662 bushels of peaches.
- 15,406 bushels of pears.

Two thousand three hundred and seventy-six manufacturing establishments with \$28,118,030 invested capital, pay 21,969 employees \$8,330,997 yearly.

Two thousand and seventy-five miles of railroad in 1895; assessed value of railroad property, \$22,447,495.

Two thousand one hundred and sixty churches and edifices of worship, valued at \$3,701,483.

Church members, all denominations, 1890, 189,917, or 24.9 per cent. of the population.

Facts and Figures for the fifty-five counties of West Virginia, show property subject to taxation:

16,636,089 acres of land, assessed 1896, at \$86,134,941; town lots assessed at \$13,788,098; buildings at \$43,291,795; personal property at \$51,307,197; total assessed value, all personal property and of real estate, \$197,920,041.

Personal property, showing stock and cattle in the fifty-five counties, as follows:

185,621 horses and mules, assessed at \$5,338,652.	
318,555 cattle	" " 4,180,520.
441,691 sheep	" " 601,442.
57,137 hogs	" " 1,952.

The following statement, shows assessed valuation of real estate and personal property, by years, from 1890 to 1896:

YEARS.	Real Estate.	Personal Property.
1890.....	\$ 121,202,365	\$ 48,725,222
1891.....	124,270,542	51,743,193
1892.....	147,685,972	51,707,095
1893.....	145,947,024	54,244,169
1894.....	145,737,960	51,502,003
1895.....	147,657,511	51,920,730
1896.....	146,612,844	51,307,197

*2,619,755 increase in 6 years*

*Population of West Virginia, by Counties.*

COUNTIES.	Population.		Increase.	
	1890.	1880.	Number.	Per Cent.
The State.....	762,794	618,457	144,337	23.34
Barbour.....	12,702	11,870	832	7.01
Berkeley.....	18,792	17,389	1,322	7.61
Boone.....	6,885	5,821	1,061	18.22
Braxton.....	13,928	9,787	4,141	42.31
Brooke.....	6,660	6,013	647	10.76
Cabell.....	23,505	13,744	9,831	71.67
Calhoun.....	8,155	6,072	2,083	34.31
Clay.....	4,659	3,460	1,199	84.65
Doddridge.....	12,182	10,552	1,631	15.46
Fayette.....	20,542	11,560	8,982	77.70
Glimmer.....	9,746	7,108	2,638	37.11
Grant.....	6,802	5,542	1,260	22.74
Greenbrier.....	18,634	15,060	2,974	19.75
Hampshire.....	11,419	10,266	1,053	10.16
Hancock.....	6,414	4,882	1,532	31.38
Hardy.....	7,567	6,794	773	11.30
Harrison.....	21,919	20,181	1,738	8.61
Jackson.....	19,021	16,312	2,709	16.61
Jefferson.....	15,553	15,005	548	3.65
Kanawha.....	42,756	32,466	10,290	31.69
Lewis.....	15,895	13,269	2,626	19.79
Lincoln.....	11,216	8,739	2,507	28.69
Logan.....	11,101	7,329	3,772	51.47
McDowell.....	7,300	3,074	4,226	137.48
Marion.....	20,721	17,198	3,523	20.48
Marshall.....	20,735	18,840	1,895	10.06
Mason.....	22,863	22,293	570	2.56
Mercer.....	16,062	7,467	8,535	114.30
Mineral.....	12,085	8,630	3,455	40.03
Monongalia.....	15,705	14,585	720	4.80
Monroe.....	12,429	11,501	928	8.07
Morgan.....	6,744	5,777	967	16.74
Nicholas.....	9,309	7,223	2,086	28.88
Ohio.....	41,557	37,457	4,100	10.95
Pendleton.....	8,711	8,022	689	8.59
Pleasants.....	7,539	6,256	1,283	20.51
Pocahontas.....	6,814	5,591	1,223	21.87
Preston.....	20,355	19,691	1,261	6.62
Putnam.....	14,342	11,375	2,967	26.08
Raleigh.....	9,597	7,367	2,230	30.27
Randolph.....	11,634	8,102	3,531	43.58
Ritchie.....	16,621	13,474	3,147	23.36
Roane.....	15,303	12,184	3,119	26.60
Summers.....	13,117	9,033	4,084	45.21
Taylor.....	12,147	11,455	692	6.04
Tucker.....	6,454	3,151	3,308	104.98
Tyler.....	11,962	11,073	889	8.03
Upshur.....	12,714	10,249	2,465	24.05
Wayne.....	18,652	14,739	3,913	26.55
Webster.....	4,783	3,207	1,576	49.14
Wetzel.....	16,841	18,896	2,945	21.19
Wirt.....	9,411	7,104	2,307	32.47
Wood.....	28,612	25,006	3,606	14.42
Wyoming.....	6,247	4,322	1,925	44.54

*The Following Fifteen Cities and Towns have a Population of More than 2000.*

CITIES AND TOWNS.	COUNTIES.	POPULATION.		INCREASE	
		1890.	1880.	Number.	Per Cent.
Wheeling city.....	Ohio .....	34,522	30,737	3,785	12.31
Huntington city.....	Cabell .....	10,108	3,174	6,934	218.46
Parkersburg city.....	Wood .....	8,408	6,582	1,826	27.74
Martinsburg town.....	Berkeley .....	7,226	6,335	891	14.06
Charleston city.....	Kanawha.....	6,742	4 192	2,550	60.83
Grafton town.....	Taylor .....	3,159	3,030	129	4.26
Clarksburg town.....	Harrison .....	3,008	2,307	701	30.39
Benwood town.....	Marshall .....	2,934	.....	2,934	.....
Moundsville city.....	Marshall .....	2,688	1,774	914	51.52
Hinton town.....	Summers.....	2,570	879	1,691	192.38
New Cumberland town	Hancock .....	2,305	1,218	1,087	89.24
Charlestown town.....	Jefferson .....	2,287	2,016	271	13.14
Wellsburg city.....	Brooke .....	2,235	1,815	420	23.14
Keyser town.....	Mineral.....	2,165	1,693	472	27.88
Weston town.....	Lewis.....	2,143	1,516	627	41.86

## BARBOUR COUNTY.

Area, 395 square miles. Population, 12,702.

Situated slightly to the northeast of the center of the State.

The Tygart's Valley river flows through the center of the county; the Grafton Division of the Baltimore and Ohio railroad runs along its eastern bank for the entire distance.

County roads are in fair condition; all parts of the county within easy reach of the railroad.

## SOIL.

The eastern portion is hilly merging into the Laurel mountains that form the eastern boundary; more rolling in character west of the Tygart's Valley river and there the best farming land is found.

Black loam, red and yellow clay predominate; fertile and peculiarly adapted to grazing. Alluvial bottom land is plentiful.

Different grades of iron ore, manganese and oil exist in paying quantities. Building stone is plentiful and the rich deposits of limestone, sandstone and fire clays have been but partially developed. Salt deposits exist but have not been utilized.

## WATER.

The Tygart's Valley river, a branch of the Monongahela, and its tributaries the Buckhannon, Middle Fork, Elk, Genaty and numerous creeks extend in all directions. The supply is abundant and of the best quality.

## COAL.

The supply is unlimited. Nearly every property owner has his own coal bank.

The Roaring Creek coal underlies the entire county; there are also extensive deposits of Pittsburg coal.

Three commercial mines operated. Production, year ending June 30, 1897, reported by the State Mine Inspector, 31,658 tons.

## TIMBER.

The larger portion of the county is still covered with the virgin growth.

Poplar, oak, hickory, ash and chestnut are the predominating



varieties. Large quantities, especially of poplar and oak, are marketed every year.

### FUEL.

Wood costs from 50 cents to \$1.00 per cord and coal 85 cents to \$1.00 per ton.

### COST OF LAND.

Good farm land sells at from \$15.00 to \$25.00, and timber land from \$10.00 to \$25.00 per acre.

### FARM LABOR.

The supply is sufficient. Wages average about 50 cents per day with board.

### PRINCIPAL CROPS.

Corn and wheat. The average yield of corn is from 35 to 50 bushels per acre, and the selling price last year 40 to 50 cents per bushel; wheat sold for 75 cents to \$1.00 per bushel.

Oats, rye and other cereals, also vegetables and fruits are raised. Natural grasses of good quality are abundant. Cattle raising is the principal agricultural pursuit. Fine large cattle are raised in great numbers and vast herds shipped, principally to the eastern markets.

Mining, lumbering and cattle raising are the principal industries.

### SOCIAL ADVANTAGES.

The county is not thickly settled. About 98% of the population are Americans. The majority of them own their own homes, are educated and contented. There are a few Germans, Irish and Negroes.

There are about 100 schools, or one to every 30 families, also 65 religious organizations with 64 church edifices valued at \$50,000.

### GENERAL ADVANTAGES.

High altitude, healthful climate, rich mineral deposits and timber land; soil, climate and locality especially adapted to stock raising; transportation facilities fair, and a population peculiarly American.

Philippi, the county seat and the principal town, has a popula-

tion of 400 and is situated on the Grafton Division of the Baltimore and Ohio railroad about 124 miles from the city of Wheeling. Numerous towns and villages are scattered through the county.

### FACTS AND FIGURES.

Barbour county has 222,996 acres of land, assessed 1896 at \$1,-660,148; town lots assessed at \$45,875; buildings at \$285,476; personal property at \$616,351; total assessed value, all personal property and of real estate, \$2,608,350.

Personal property consists in part of:

4,303 horses and mules	assessed at \$ 98,189
8,874 cattle	assessed at 120,693
9,670 sheep	assessed at 14,155
1,510 hogs	assessed at 4,320

36 manufacturing establishments with \$82,905 invested capital, pay 145 employees \$33,009 yearly.

102 public schools, with 3,436 pupils enrolled, employed 106 teachers in 1896.

Value of school houses and school property, \$41,102.

65 churches, all denominations, have a membership of 3,817.

Value of church property, \$49,285.

1,694 farms of 190,599 acres are valued at \$3,412,480.

5,089 acres of land, produced 1890, 51,179 bushels of wheat.

9,873 " " " " " 220,284 " " corn.

3,411 " " " " " 52,055 " " oats.

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### BERKELEY COUNTY.

Area 320 square miles. Population, 18,702.

Situated in the extreme eastern part of the State. Extends from Maryland on the north to Virginia on the south.

The Potomac river, the Chesapeake and Ohio canal and the Baltimore and Ohio railroad traverse the northern boundary. The Cumberland Valley railroad enters the county from the north and runs through its entire length. Shipping facilities are excellent, all parts of the county are in close touch with the eastern markets.

## SOIL.

Principally rolling agricultural land. Limestone, soapstone, alluvium and loam predominate; exceedingly fertile.

The extensive deposits of limestone are utilized in the manufacture of lime. Building stone is plentiful; fire clay and potters' clay exist in paying quantities.

Iron ore is found in considerable quantities in some sections, and has been mined. Manganese is also found.

## WATER.

The supply is all that could be desired. Springs and streams are plentiful and water is of good quality.

The Potomac river forms the northern boundary; its tributaries, the Opequon, Mill Creek, Middle Creek and Back Creek and smaller streams extend into every section.

## ROADS.

The roads, with the exception of two good pikes controlled by corporations, are kept up by county and district road tax; they are all in good condition.

## TIMBER.

The larger portion of the mercantile timber has been marketed. Possibly less than one-third of the original growth is now standing. There remains, however, considerable tracts, consisting principally of hard wood.

## FUEL.

Anthracite coal is mined to a limited extent in the western portion. Bituminous coal costs from \$2.00 to \$3.00 per ton and anthracite from \$5.00 to \$6.00 per ton. Wood costs from \$1.00 to \$3.00 per cord.

## COST OF LAND.

Price of good farm land varies, according to locality, from \$10.00 to \$60.00 per acre. Timber land costs from \$10.00 to \$40.00 per acre.

## FARM LABOR.

The supply is generally sufficient, though there appears to be

an increasing demand for the more intelligent class of laborers. Wages average from \$10.00 to \$15.00 per month, including board.

### PRINCIPAL CROPS.

Wheat and fruits. Winter wheat is raised extensively, the yield being on the average 20 bushels to the acre, and the selling price last year was about 90 cents per bushel.

The soil is especially adapted to raising fruits; peaches, apples, pears and other small fruits are grown extensively; the varieties are unexcelled in color and flavor, and the culture is rapidly taking first place as a source of wealth.

Cereals of all kinds grow rapidly, and vegetables, dairy products and cattle are among the exports of the county.

### SOCIAL ADVANTAGES.

About 90 per cent. of the population are Americans; as a rule they are educated and prosperous.\* There are 71 free schools, also a number of private institutions. The county has 58 churches valued at \$152,878, besides social and fraternal organizations.

Portions have been settled for many years and the social advantages have improved with the increase in prosperity.

### GENERAL ADVANTAGES.

A healthful climate, winters short and not severe; soil fertile; good water plentiful; supply of natural fertilizer (lime) unlimited.

The county lies in the Shenandoah Valley, the most fertile region of Virginia, and is within easy reach of the best markets. The soapstone soils produce the finest variety of fruits; the blue grass is abundant and makes sheep and cattle raising profitable.

While agriculture is the principal source of wealth there are large manufacturing interests.

### MARTINSBURG.

The county seat is situated at the junction of the Baltimore and Ohio and the Cumberland Valley railroads, 100 miles from Baltimore and 74 miles from Washington. It has a population of 7,500; its manufacturing interests are large and increasing; it is one of the principal distributing points of the Shenandoah Valley. There are knitting factories, wood working establishments, grain elevators and flour mills.

The city has macadamized streets, street railway, electric lights, gas, water works and sewerage.

Other towns of considerable importance are scattered through the county.

## FACTS AND FIGURES.

Berkeley county has 193,835 acres of land, assessed at \$1,961,-281; town lots assessed at \$420,586; buildings at \$1,987,246; personal property at \$1,232,585; total assessed value, all personal property and of real estate, \$5,601,698.

Personal property consists in part of:

4,842 horses and mules assessed at	\$115,485.
5,134 cattle	“ “ 66,110.
11,170 sheep	“ “ 17,510.
1,315 hogs	“ “ 6,560.

42 manufacturing establishments with \$320,297 invested capital, pay 459 employees, \$163,106 yearly.

71 public schools, with 2,829 pupils enrolled, employed 78 teachers in 1896.

Value of school houses and school property, \$30,998.

58 churches, all denominations, have a membership of 4,329.

Value of church property, \$152,878.

1,100 farms of 164,448 acres are valued at \$4,603,960.

24,925 acres of land produced 1890, 335,914 bushels of wheat.

19,222 “ “ “ “ “ 560,919 “ “ corn.

1,607 “ “ “ “ “ 31,668 “ “ oats.

## BOONE COUNTY.

Area, 515 square miles. Population, 6,885.

Situated in the southwestern portion of the State.

Traversed from south to north by the Big and the Little Coal rivers. At present the county is without a railroad. The nearest point is Brownstown, 30 miles from Madison, the county seat.

## SOIL.

Sandy loam predominates in the valleys; creek and river bottom land is plentiful. The surface is generally mountainous and hilly.

Excellent fire clays and good building stone are found in abund-

ance. Iron ore exists in considerable quantities, but has not been mined.

### WATER.

The Big and Little Coal rivers that flow through the entire length of the county, and their tributaries, the Pond, Spruce and West Fork and numerous smaller streams. Drinking water is plentiful and of good quality.

### COAL.

Comprises one of the richest coal districts in the State. The quantity is unlimited. The splint and cannel varieties of bituminous coal predominate. Of the cannel, both the smooth black and "birds eye" varieties are found, as are also gas and coking coal in abundance.

The deposits are favorably situated for working and offer rare inducements for investment and development. No coal is mined except for local consumption.

### TIMBER.

Lumbering is the leading industry. Fully half the poplar, and three-fourths of the other varieties of forest trees are still standing. The poplar, oak and walnut lumber is exceptionally fine; other varieties, such as ash, hickory, maple, etc., are plentiful.

The numerous rivers and streams furnish excellent facilities for floating out logs.

### COST OF LAND.

Farm land costs from \$5.00 to \$10.00 per acre, and timber land from \$3.00 to \$7.00 per acre.

### FARM LABOR.

The supply is sufficient. Wages average about 50 cents per day with board.

### PRINCIPAL CROP.

Corn: the average yield about 30 bushels to the acre and selling price last year from 50 to 75 cents per bushel.

Wheat, oats, millet, sorghum, vegetables and fruits are among the agricultural products. Cattle and hogs are raised and, to some extent, shipped.

## SOCIAL ADVANTAGES.

The county is thinly settled, there being about 13 inhabitants to the square mile. Fully 95 per cent. are Americans; a few Germans and Irish.

There are 22 churches of various denominations and 71 free schools. The majority of the people own their own homes and are prosperous and contented.

## GENERAL ADVANTAGES.

Mineral resources are unlimited; soil is fertile; water is plentiful and wholesome; climate is healthful; extensive forests and good lumbering facilities.

The county is rich in undeveloped natural resources. It affords excellent opportunity for settlement. Land and necessities of life are cheap and industry and thrift would lead to certain success.

## MADISON.

The county seat is situated about 80 miles from the railroad, near the centre of the northern section of the county about 40 miles from Charleston.

## FACTS AND FIGURES.

Boone county has 412,153 acres of land, assessed 1896 at \$778,204; buildings at \$85,032; personal property at \$285,754; total assessed value, all personal property and of real estate, \$1,148,990.

Personal property consists in part of:

1,514 horses and mules assessed at \$67,151.

3,886 cattle " " 49,178.

1,972 sheep " " 1,972.

1,737 hogs " " 5,481.

24 manufacturing establishments with \$336,138 invested capital, pay 146 employees \$30,155 yearly.

71 public schools, with 2,058 pupils enrolled, employed 76 teachers in 1896.

Value of school houses and school property, \$14,725.

22 churches, all denominations, have a membership of 1,081.

Value of church property, \$3,500.

1,012 farms of 231,422 acres are valued at \$1,076,870.

1,809 acres of land produced 1890, 7,355 bushels of wheat.

10,481 " " " " " 190,252 " " corn.

1,971 " " " " " 18,548 " " oats.

## BRAXTON COUNTY.

Area, 565 square miles. Population, 13,928.

Is the central county of the State. The West Virginia and Pittsburg railroad extends into the northern, central and eastern portion. The Elk river runs through the southern and western portion, by means of which transportation is possible to Charleston.

## SOIL.

Consists largely of high plateau land; portions hilly. Red clay and black loam predominate; is exceedingly fertile; especially adapted to the raising of wheat, corn and grasses.

Has some of the best agricultural land in the State.

Five rivers have their courses through the county and bottom land is plentiful. Limestone, sandstone and fire clays exist in abundance. Oil and salt have been discovered and are to some extent utilized. Iron ore is found in the southern portion.

## WATER.

The Elk, Little Kanawha, Big and Little Birch and Holly rivers flow through the county and small streams extend in all directions. The county is well watered, and excellent water power afforded for manufacturing purposes.

## COAL.

The entire county is underlaid with extensive coal deposits.

The coking coal is of the finest quality. Splint, Peacock and Cannel coals are also found.

No commercial mines are now operated, the quantity mined being limited to the local demand.

## TIMBER.

The finest in the State. Oak, poplar, hemlock, hickory and ash are the predominating varieties. Probably one-half the county is covered with the original forests.

Lumbering is still the principal industry.

## COST OF LAND.

Good farm land costs from \$6.00 to \$20.00 per acre, and timber land from \$6.00 to \$15.00 per acre



## FARM LABOR.

The supply is generally sufficient. Wages range from 50 cents to 75 cents per day, including board.

## PRINCIPAL CROP.

Corn: is raised in about four months and averages about 40 bushels to the acre. It sold last year for 40 cents a bushel.

Other cereals, vegetables and fruits yield well. Is a fine fruit growing region.

The fine natural grasses make grazing and stock raising the principal agricultural pursuit.

## SOCIAL ADVANTAGES.

Fully 95 per cent. of the population are Americans. There are a few Germans and Irish. As a rule the inhabitants are educated and prosperous.

There are 53 religious organizations and 53 churches of various denominations, also 183 free schools, including an academy. The educational advantages are excellent.

## GENERAL ADVANTAGES.

Medium altitude; healthful, mild climate; a wealth of mineral deposits and excellent timber land.

Water power is abundant; exceptionally favorable conditions for lumbering.

A fertile soil and every prospect of rapid development of the agricultural advantages. Good shipping facilities. Cattle, lumber and poultry are among the principal exports.

Sutton and Burnsville are the principal towns.

## SUTTON.

The county seat has a population of 300. It is situated about the center of the county on the Elk river, at the terminus of a branch of the West Virginia and Pittsburg railroad, 192 miles from Wheeling.

## BURNSVILLE

Is a town of 275 inhabitants, situated in the northern part of the county at the junction of the West Virginia and Pittsburg railroad and the Little Kanawha river.

The county is well supplied with towns and villages.

## FACTS AND FIGURES.

Braxton county has 874,925 acres of land assessed 1896 at \$1,-894,832; town lots assessed at \$28,077; buildings at \$225,097; personal property at \$498,252; total assessed value, all personal property and of real estate, \$2,141,264.

Personal property consists in part of:

3,983 horses and mules assessed at \$93,634.

7,860 cattle " " 80,904.

8,461 sheep " " 8,644.

1,427 hogs " " 3,626.

138 public schools, with 4,785 pupils enrolled, employed 138 teachers in 1896.

Value of school houses and school property, \$37,841.

53 churches, all denominations, have a membership of 2,577.

Value of church property, \$22,800.

1,776 farms of 228,860 acres are valued at \$2,079,090.

7,456 acres of land produced 1890, 59,735 bushels of wheat.

12,628 " " " " " 291,425 " " corn.

1,520 " " " " " 15,385 " " oats.

## BROOKE COUNTY.

Area, 84 square miles. Population, 6,660.

One of the most northern counties. Lies in the "Northern Pan Handle." It is the smallest county in the State.

The Ohio river forms the western boundary and is a cheap means of transportation north and south.

The Pittsburg, Cincinnati, Chicago and St. Louis railroad crosses the northern portion and skirts the Ohio river through the entire county.

## SOIL.

River bottom land; lime and free stone. Ohio river bottoms are wide and level, back from the river it is generally rolling in character. The fertile soil with proximity of extensive markets and good transportation facilities have made it one of the leading agricultural counties of the State.

Building sand is abundant, and building stone of an excellent quality is quarried. There are rich deposits of limestone and fire clays.

Natural gas has been discovered and is utilized.

### WATER.

The Ohio river and its tributaries, the Buffalo, Cross, and Harmons creeks and numerous smaller streams.

Good drinking water is plentiful.

### ROADS.

In fair condition. All points within easy reach of railroad or river.

### COAL.

An abundance is found in all parts of the county. Numerous surface veins are mined for home consumption, reducing fuel expense to a minimum.

Three commercial mines operated, year ending June 30, 1897, reported by the State Mine Inspector, 42,198 tons.

### TIMBER.

The marketable timber is practically exhausted. Sufficient is standing for home consumption and agricultural purposes; it consists principally of oak, poplar and hardwoods.

### FUEL.

Wood costs about 75 cents per cord. Coal at the mines or bank costs from 75 cents to \$1.00 per ton.

### COST OF LAND.

Good farm land costs from \$25.00 to \$40.00 per acre.

### FARM LABOR.

The supply is sufficient. Wages range from \$13.00 to \$15.00 per month, with board.

## PRINCIPAL CROPS.

Corn and wheat. Average yield of corn is 45 bushels to the acre, and wheat from 18 to 25 bushels. Corn sold for 40 cents and wheat about 90 cents per bushel during the past year.

Other cereals and vegetables, also fruits (principally apples, pears and peaches), are grown in abundance.

Sheep and hogs are raised and shipped in large numbers. Wool is one of the leading products and is of a particularly fine quality.

Proximity to markets and good shipping facilities cause a large percentage of the products to be exported.

## SOCIAL ADVANTAGES.

The county is small and the population is well distributed. About 80 per cent. are Americans; the remainder principally Germans and Irish. As a rule they are educated and prosperous. There are 21 churches of various denominations; 46 free schools and some private institutions, also numerous social and fraternal organizations.

Bethany College, a high grade college for both sexes, is located at Bethany, in this county.

## GENERAL ADVANTAGES.

Healthful climate; pure drinking water and fertile soil, fuel cheap, exceptionally good shipping facilities.

Location, soil and climate make it one of the most desirable counties for agricultural purposes.

The manufacturing interests are extensive and diversity of occupation afforded.

## WELLSBURG,

The principal town, has a population of about 8,000, is a manufacturing centre; glass, straw paper, paper sacks, cigars and other articles are made; there are also foundries machine shops, etc. It is situated on the Pittsburg, Cincinnati, Chicago and St. Louis railroad, about 16 miles from Wheeling and 50 miles from Pittsburg.

## FACTS AND FIGURES.

Brooke county has 57,116 acres of land, assessed at \$1,562,463; town lots assessed at \$113,731; buildings at \$721,728; personal

property at \$685,183; total assessed value, all personal property and of real estate, \$8,033,105.

Personal property consists in part of:

1,769 horses and mules assessed at	\$44,840.
2,012 cattle	" " 29,575.
12,863 sheep	" " 15,790.
222 hogs	" " 1,480.

18 manufacturing establishments with \$247,687 invested capital, pay 469 employees \$189,320 yearly.

46 public schools, with 1,497 pupils enrolled, employed 47 teachers in 1896.

Value of school houses and school property, \$38,887.

21 churches, all denominations, have a membership of 2,244.

Value of church property, \$71,000.

373 farms of 54,580 acres are valued at \$2,575,840.

2,904 acres of land produced 1890, 49,057 bushels of wheat.

4,160 " " " " " 137,354 " " corn.

2,576 " " " " " 86,750 " " oats.

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## CABELL COUNTY.

Area, 800 square miles. Population, 23,595.

Situated in the southwestern part of the State. The Ohio river and the Ohio River railroad skirt the north and western boundary.

The Chesapeake and Ohio railroad passes through the county from east to west.

## SOIL.

Red and yellow clay and sandy loam predominate, is rich and productive. Rolling in character except the river bottoms which are broad and exceedingly fertile.

Back from the rivers the soil is especially fine for grasses, cattle raising being largely engaged in.

Building stone of good quality, also sand and other building materials and fire and brick clay are abundant.

Oil has been discovered, but not as yet in paying quantities,

## WATER.

The Ohio, Guyandotte and Mud river; Nine Mile and Seven Mile Creek and numerous smaller streams.

Good drinking water is plentiful.

## COAL.

Some has been discovered, but not in sufficient quantities to justify commercial mining. Considerable is mined for local use.

## TIMBER.

Lumbering has been carried on extensively, and possibly two-thirds of the original growth has been cut.

Large tracts of valuable mercantile timber still remain.

The principal varieties are oak, poplar and pine.

## FUEL.

Coal costs from \$1.00 to \$2.00 per ton and cut wood \$2.00 per cord.

## COST OF LAND.

Good farm land costs from \$10.00 to \$20.00 per acre, and timber land from \$8.50 to \$15.00 per acre.

## FARM LABOR.

Is abundant. Wages average 50 cents per day, including board, and 75 cents without board.

## PRINCIPAL CROP.

Wheat and corn. Wheat is raised in ten months and corn in five. The average yield of corn is 30 bushels and wheat 15 bushels to the acre.

Last year corn sold on the average for 30 cents and wheat 60 cents per bushel.

Tobacco, oats, millet and hay are grown extensively. Vegetables do well. Apples, peaches, pears and plums are also cultivated and develop rapidly.

Grass grows well, and cattle raising is one of the principal pursuits.

Wheat, tobacco and cattle are the principal exports and sources of wealth.

The manufacturing interests of the county are extensive and varied.

### SOCIAL ADVANTAGES.

As a rule the inhabitants are prosperous and educated. About 85 per cent. are Americans, the remainder being principally Germans.

There are 102 free schools; a branch of the State Normal School, also Barbourville College, a large private institution, 53 religious organizations and 53 churches.

### GENERAL ADVANTAGES.

Healthful climate; abundance of pure water: fertile soil and extensive river bottoms unsurpassed in productiveness.

Excellent grazing districts. Good shipping facilities by railroad and water.

Manufacturing and mechanical industries are extensive and afford a diversity of employment.

Huntington and Milton are the principal cities.

### HUNTINGTON.

Situated on the Ohio river, is the principal city and the second in size in the State. Population about 15,000. The Ohio River railroad and the Chesapeake and Ohio railroad pass through the city. The repair shops of the Chesapeake & Ohio railroad are located here.

The manufacturing industries employ not less than 2,500 men.

In many respects it is a complete city. There are broad, paved streets; sewerage, electric light and power plants, gas, water works, good fire department, electric and horse cars, public schools, State Normal School and business colleges.

### MILTON.

A town of about 500 population, is situated on the Chesapeake and Ohio railroad, and is the principal point in the eastern part of the county.

### FACTS AND FIGURES.

Cabell county has 170,993 acres of land, assessed 1896 at \$1,050,575; town lots assessed at \$901,050; buildings at \$3,353,035;

personal property at \$2,289,861; total assessed value, all personal property and of real estate, \$7,538,966.

Personal property consists in part of:

3,687 horses and mules assessed at \$11,915.

4,118 cattle " " 55,841.

1,988 sheep " " 2,143.

699 hogs " " 2,887.

48 manufacturing establishments with \$1,548,904 invested capital, pay 1,127 employees, \$479,898 yearly.

102 public schools, with 8,948 pupils enrolled, employed 110 teachers in 1896.

Value of school houses and school property, \$51,921.

58 churches, all denominations, have a membership of 4,625.

Value of church property, \$114,650.

1,285 farms of 131,126 acres are valued at \$1,832,420.

6,217 acres of land produced 1890, 67,194 bushels of wheat.

15,187 " " " " " 383,221 " " corn.

8,265 " " " " " 50,188 " " oats.

## CALHOUN COUNTY.

Area, 260 square miles. Population, 8,155.

Is situated near the center of the State. The Little Kanawha river, navigable to within a few miles of the county seat, flows across the northern section.

## SOIL.

Black loam and clay; considerable limestone, fertile and productive.

The larger portion is hilly, though the hills are not steep or rugged. Practically the whole county is good land for cultivation or grazing.

Iron ore of a good quality is abundant.

Oil has been discovered in paying quantities and is now being utilized.

There is a limited supply of limestone.

Sandstone and a good quality of fire and potters clay is found in different sections.



## WATER.

The Little Kanawha river in the northern and the West Fork of the same in the southern part with their numerous tributaries give an abundant supply.

Drinking water is pure and plentiful.

## ROADS.

In a fair condition; kept up by a road tax.

## COAL.

Surface coal is confined to the southern part of the county. The entire county is underlaid with large veins 60 or 70 feet below the surface.

Mining operations have only been sufficient to supply the local demand.

## TIMBER.

The forests in the greater portion of the county have scarcely been touched; fully half the area is covered with the original growth.

The trees are fine and cut to good advantage.

Oak, poplar, beech, chestnut, maple, walnut and other hard woods are the principal varieties.

The county is well drained and the streams afford cheap transportation for logs.

## FUEL.

Coal costs \$3.00 per ton and wood from 80 cents to \$1.00 per cord.

## COST OF LAND.

Good farm land costs from \$10.00 to \$15.00 per acre. In some sections it is even less, averaging about \$8.00 per acre.

## FARM LABOR.

There is an abundant supply. Wages range from 50 to 75 cents per day with board.

## PRINCIPAL CROP.

Corn and wheat. The yield of corn is about 40 and wheat 20 bushels to the acre. Wheat sold for 75 and corn 50 cents per bushel on the average during last year.

Rye, oats, buckwheat, vegetables of all kinds and fruits are among the crops of the county.

The land is well adapted to all agricultural pursuits.

Blue grass grows well and makes excellent pasturage. Cattle and sheep raising is of increasing importance.

The lumber camps make a good local market, but considerable produce and cattle are shipped.

Agriculture is the principal source of wealth.

## SOCIAL ADVANTAGES.

About 95 per cent. of the inhabitants are Americans; there are some Germans and Irish.

There is no railroad at present. The county is well supplied with towns and villages; the roads are in fair condition.

Free schools numbering 69 or more, are conveniently located and well attended. There are 35 churches of various denominations and social and fraternal organizations.

## GENERAL ADVANTAGES.

Soil is rich and productive; climate is healthful. Rivers and streams are abundant, they extend in all directions and assist in transporting produce.

Land lies well for agriculture and grazing.

Timber of good quality is abundant.

There is a fair supply of minerals.

Good farm and timber land is cheap.

Excellent advantages are offered the agriculturist.

A railroad now in course of construction, that will follow the Little Kanawha river will enter the county and greatly improve the shipping facilities.

## GRANTSVILLE.

The county seat is situated on the Little Kanawha river, about 70 miles above Parkersburg. It has a population of 300, and is in the midst of a beautiful and prosperous farming country.

## FACTS AND FIGURES.

Calhoun county has 171,232 acres of land assessed at \$604,424; town lots assessed at \$3,507; buildings at \$64,472; personal property at \$183,341; total assessed value, all personal property and of real estate, \$855,744.

Personal property consists in part of:

1,967 horses and mules assessed at	\$58,869.
2,998 cattle	" " 36,730.
2,578 sheep	" " 2,581.
438 hogs	" " 1,658.

69 public schools, with 2,514 pupils enrolled, employed 68 teachers in 1896.

Value of school houses and school property, \$21,730.

35 churches, all denominations, have a membership of 1,661.

Value of church property, \$12,500.

1,221 farms of 133,608 acres are valued at \$1,272,030.

3,851 acres of land produced 1890, 33,088 bushels of wheat.

8,225 " " " " " 210,180 " " corn.

1,599 " " " " " 20,341 " " oats.

## CLAY COUNTY.

Area, 325 square miles. Population, 4,659.

Situated slightly to the southwest of the centre of the State.

The Charleston, Clendennin and Sutton railroad penetrates and passes about half through the county.

The Elk river, navigable for push boats, flows through the centre from east to west.

## SOIL.

The surface is, as a rule, undulating and hilly.

Clay subsoil with rich loam is plentiful; is fertile and productive. The larger portion is excellent grazing country.

Building stone, limestone, building sand and fire clays are plentiful.

Natural gas and oil have been discovered, though not utilized to any extent.

Iron ore of a fine quality exists in paying quantities.

## WATER.

Drinking water is abundant and is of the best quality.

The Elk river and its tributaries, the Big and Little Sycamore, Big and Little Laurel, and numerous smaller streams.

## ROADS.

Are in fair condition.

## COAL.

Found in every section. The county is wonderfully favored with rich deposits. Soft bituminous, splint and cannel coal of the best varieties are plentiful. The veins are remarkably thick, lie above water level and are easily worked. No coal is mined except for local use.

## TIMBER.

Comparatively a small portion of the county has been cleared; about seven-eighths of the virgin forests still stands. The quality is exceptionally fine. White oak, poplar, ash and hickory are the predominating varieties. Lumbering is the principal source of wealth.

## FUEL.

Coal costs from 50 cents to 80 cents a ton at the mine and wood about 40 cents a cord.

## COST OF LAND.

Good farm land sells at \$10.00 per acre, and timber land from \$10.00 to \$15.00 per acre.

## FARM LABOR.

The supply is plentiful. Wages average about \$16.00 per month, including board.

## PRINCIPAL CROP.

Corn. Average yield is from 25 to 35 bushels to the acre; sold past year for 50 cents to 60 cents per bushel.

Hay, wheat and other cereals, also vegetables and fruits grow readily.

Cattle, hogs and sheep are the principal products exported. Grasses grow readily and grazing is a leading industry.

## SOCIAL ADVANTAGES.

Not a thickly settled county. About 90 per cent. of the population are Americans, a few Germans.

There are 48 free schools, or one to every 33 families, also 23 religious organizations, 23 churches, and a number of social fraternal societies.

## GENERAL ADVANTAGES.

One of the richest undeveloped counties of the State. Good climate; rich soil; wealth of coal and other minerals; splendid forests.

Good facilities for shipping lumber; railroad recently constructed and now about to be further extended.

## CLAY,

The county seat, has a population of about 100. It is situated on the Elk river at the present terminus of the Charleston, Clendennin and Sutton railroad. Distance to Charleston, the capital of the State, 50 miles.

There are a number of towns and villages scattered through the county.

## FACTS AND FIGURES.

Clay county has 236,263 acres of land assessed 1896 at \$659,518; town lots assessed at \$2,577; buildings at \$23,645; personal property at \$113,311; total assessed value, all personal property and of real estate, \$799,051.

Personal property consists in part of:

1,088 horses and mules assessed at	\$32,860.
2,135 cattle	" " 21,596.
2,729 sheep	" " 2,737.
933 hogs	" " 1,992.

48 public schools, with 1,620 pupils enrolled, employed 49 teachers in 1896.

Value of school houses and school property, \$10,471.

23 churches, all denominations, have a membership of 1,068.

Value of church property, \$5,000.

615 farms of 66,148 acres are valued at \$357,030.

1,367 acres of land produced 1890, 9,890 bushels of wheat.

5,315 " " " " " 98,624 " " corn.

1,453 " " " " " 13,851 " " oats.

## DODDRIDGE COUNTY.

Area, 475 square miles. Population, 12,183.

Situated in the north central part of the State. The Baltimore and Ohio railroad passes through the centre from east to west.

## SOIL.

Limestone and loam predominate, is fertile and productive. The surface is gently rolling; broad and fertile valleys are numerous.

Soil, climate and location make it one of the best agricultural and grazing counties in the State.

Building stone is abundant, the supply of limestone and good clay is sufficient.

Rich in oil and natural gas, both products have been largely developed. From 140 to 150 producing oil wells are in the north-eastern section.

## WATER.

The Middle Island creek, McElroy, Big Flint and Arnolds creeks and their tributaries furnish all the running water desired.

Drinking water is pure and abundant.

## ROADS.

In fair condition.

## FUEL.

Deposits of coal are found in different sections and mined to a limited extent for the local market. Coal costs about \$1.40 per ton, and cut fire wood \$2.00 per cord.

## TIMBER.

One-half of the county is still covered with the original growth, some of which has been culled. Oak, poplar, pine and hickory are the principal varieties. The quality is excellent. The water courses and railroads supply convenient transportation.

Lumbering is still a leading industry.

## COST OF LAND.

Good farm land costs from \$15.00 to \$20.00 per acre, and timber land from \$10.00 to \$15.00 per acre.

## FARM LABOR.

Supply is generally sufficient, though scarcity is reported in some sections. Wages average about \$15.00 per month, including board.

## PRINCIPAL CROPS.

Corn and wheat; corn averages 30 bushels and wheat 12 bushels to the acre. Corn sold for 50 cents and wheat 90 cents per bushel last year.

Exceptionally fine agricultural land. Great diversity of crops are raised. Dairy products are important.

Good grazing country. Large quantities of cattle, sheep and hogs and other products are shipped, principally to eastern markets.

Agriculture is the principal source of wealth.

## SOCIAL ADVANTAGES.

Inhabitants as a rule are educated and prosperous, about 90 per cent. are Americans. Some Germans and Irish. 102 public schools and about 48 churches of different denominations.

Fraternal and social organizations in every magisterial district.

## GENERAL ADVANTAGES.

Soil exceptionally fertile and desirable for agriculture. Healthful climate. Abundance of good water. Good facilities for transporting products.

Rich natural resources. Most desirable section for cattle raising. Energetic and intelligent population.

## WEST UNION,

The principal town, is situated on the Baltimore and Ohio railroad, about 55 miles from Parkersburg and 150 from Wheeling; has a population of 312. The county is well covered with small towns and villages.

## FACTS AND FIGURES.

Doddridge county has 214,595 acres of land assessed at \$1,470,897; town lots assessed at \$23,886; buildings at \$142,967; personal property at \$751,985; total assessed value, all personal property and of real estate, \$2,389,735.

Personal property consists in part of:

3,633 horses and mules assessed at	\$97,370.
6,805 cattle	" " 85,170.
10,821 sheep	" " 17,000.
572 hogs	" " 2,815.

102 public schools, with 3,644 pupils enrolled, employed 107 teachers in 1896.

Value of school houses and school property, \$47,100.

48 churches, all denominations, have a membership of 2,708.

Value of church property, \$30,950.

1,528 farms of 181,401 acres are valued at \$2,460,130.

6,530 acres of land produced 1890, 57,677 bushels of wheat.

9,755 " " " " " 223,095 " " corn.

815 " " " " " 12,138 " " oats.

## FAYETTE COUNTY.

Area, 750 square miles. Population, 20,542.

Situated in the south central portion of the State.

The New river runs through the county from the southeast to the northwest and is skirted for the entire distance by the Chesapeake and Ohio railroad. The Kanawha and Michigan railroad enters the county from the north. Several short coal roads extend into the interior from the main lines.

## SOIL.

Loam with clay subsoil predominates; sandy in some portions; as a rule fertile.

The surface is generally rolling table land, portions rugged and mountainous. Large portion of the county is good farming land.

Excellent building stone and fire clays are plentiful.

Good grade of iron ore has been discovered and successfully worked.

## WATER.

The New, Meadow and Gauley rivers and their numerous tributaries. Supply is abundant and easily utilized for power purposes.

Drinking water is excellent and plentiful.



## ROADS.

In fair condition; kept up under regular system of road tax and enforced service of male citizens.

## COAL.

Is the largest coal and coke producing county in the State.

Fifty-six commercial mines operated. Production, year ending June 30, 1897, reported by the State Mine Inspector, 2,993,061 tons.

The coal makes exceptionally fine coke and is in great demand. The transportation facilities are good.

Mining and coke manufacture are the principal sources of wealth.

## TIMBER.

About half the country is covered with a fine growth. Oak and poplar are the principal varieties. Lumbering is one of the leading industries.

## FUEL.

Wood costs from 75 cents to \$1.00 per cord, and coal about \$1.00 per ton.

## COST OF LAND.

Good farm land costs from \$10.00 to \$15.00 per acre, and timber land from \$10.00 to \$20.00 per acre, according to location.

## FARM LABOR.

Supply is sufficient. Wages average about \$13.00 per month, including board.

## PRINCIPAL CROPS.

Corn: yield from 25 to 40 bushels per acre; sold for 50 cents per bushel during the past year. Other cereals: hay, tobacco, vegetables, also various fruits are cultivated.

Grazing land is abundant; a large number of cattle are raised.

Of recent years the active mining operations have furnished good local market, and but a limited quantity of the agricultural products have been exported.

## SOCIAL ADVANTAGES.

Population is concentrated to some extent at points where mining operations are active.

From 75 to 80 per cent. are Americans; some Germans, Irish and Welsh. The foreign population is centered principally at the mines.

As a rule the inhabitants are fairly well educated and prosperous; the best conditions in this respect prevail in the rural districts.

There are 191 free schools, 104 religious organizations and 104 church edifices valued at \$52,760; also numerous fraternal and social organizations.

## GENERAL ADVANTAGES.

High altitude; healthful climate; pure water. Good farming land. Water power plentiful. Exceptionally rich in coal and iron; abundance of excellent timber land. Well supplied with railroads.

Mining interests have abnormally increased and the agricultural resources of the county have an exceptional opportunity for development.

## FAYETTEVILLE,

The county seat, is four miles from Fayette Station on the Chesapeake and Ohio railroad, and 54 miles from Charleston; it has a population of about 275.

## FACTS AND FIGURES.

Fayette county has 455,721 acres of land, assessed 1896 at \$2,-477,932; town lots assessed at \$69,418; buildings at \$561,999; personal property at \$791,715; total assessed value, all personal property and of real estate, \$3,901,056.

Personal property consists in part of:

3,804 horses and mules assessed at	\$121,194.
5,039 cattle	" " 65,410.
3,573 sheep	" " 4,118.
708 hogs	" " 2,038.

42 manufacturing establishments with \$838,586 invested capital, pay 508 employees \$169,485 yearly.

191 public schools, with 6,040 pupils enrolled, employed 214 teachers in 1896.

Value of school houses and school property, \$94,381.

104 churches, all denominations, have a membership of 5,366.

Value of church property, \$52,760.

1,465 farms of 225,418 acres are valued at \$2,117,510.

2,275 acres of land produced 1890, 16,709 bushels of wheat.

9,345 " " " " " 163,252 " " corn.

6,293 " " " " " 79,008 " " oats.

## GILMER COUNTY.

Area, 330 square miles. Population, 9,746.

Situated slightly to the northwest of the centre of the State.

The Little Kanawha river flows through the centre from east to west. The river is navigable for steamboats to about half way through the county. A railroad that will pass through the county is now in course of construction.

## SOIL.

Clay and loam enriched with limestone; very productive. Surface rolling and hilly.

Entire county is good agricultural land.

Some limestone; abundance of building stone and fire clays.

Iron ore and oil have been discovered but not developed.

## WATER.

Little Kanawha river and its tributaries give a plentiful supply.

Drinking water wholesome and abundant.

## ROADS.

In fair condition; kept up under the alternate law. Road tax, 35 cents on the \$100 valuation.

## COAL.

Entire county is full of fine coal, but it has not been developed. Mining is confined to the local consumption.

### TIMBER.

Over half the county is still covered with a magnificent growth; oak is the principal variety; considerable poplar, ash, other hard woods and pine are found.

Tanbark is abundant.

Lumbering is a leading industry.

### FUEL.

Coal at the bank costs 75 cents per ton; wood from 50 cents to \$1.00 per cord.

### COST OF LAND.

Good farm land costs from \$10.00 to \$20.00 per acre, and in some sections as low as \$5.00; timber land, \$10.00 per acre.

### FARM LABOR.

Supply is sufficient. Wages are 50 cents per day, including board.

### PRINCIPAL CROP.

Corn: raised in from four to six months; average yield, 50 bushels to the acre; sold last year from 40 to 50 cents per bushel.

Is exceptionally good agricultural land; all crops, including fruits, grow well.

The county lies in the blue grass belt and cattle thrive.

Cattle, sheep, hogs and poultry are the chief exports and are shipped largely to the eastern markets.

Agriculture is the principal source of wealth.

### SOCIAL ADVANTAGES.

The population is practically entirely American; there are a few Italians and Irish. There are 85 free schools and a normal school, also 50 religious organizations and 50 church edifices, and a number of fraternal organizations.

Educational and social advantages are good.

### GENERAL ADVANTAGES.

A mild, healthful climate; pure drinking water; transportation facilities fair; good agricultural land; one of the best grazing

counties of the State; cattle are exceptionally fine and easily cared for. Good farm land is cheap.

An American community educated and fairly prosperous.  
Exceptionally bright prospects for future development.

### GLENVILLE,

The county seat, has a population of about 400; is situated on the Little Kanawha river at the head of navigation. A branch of the State Normal School is located here. Is 96 miles from Parkersburg. The nearest railroad point at present is Weston, 28 miles.

### FACTS AND FIGURES.

Gilmer county has 230,268 acres of land assessed at \$684,128; town lots assessed at \$16,826; buildings at \$102,955; personal property at \$339,384; total assessed value, all personal property and of real estate, \$1,143,293.

Personal property consists in part of:

3,025 horses and mules assessed at	\$80,261.
5,501 cattle	" " 75,989.
6,243 sheep	" " 7,866.
446 hogs	" " 1,737.

85 public schools, with 2,956 pupils enrolled, employed 93 teachers in 1896.

Value of school houses and school property, \$16,806.

50 churches, all denominations, have a membership of 2,694.

Value of church property, \$32,825.

1,226 farms of 160,630 acres are valued at \$2,048,780.

5,350 acres of land produced 1890, 46,716 bushels of wheat.

3,994 " " " " " 257,681 " " corn.

720 " " " " " 10,482 " " oats.

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### GRANT COUNTY.

Area, 490 square miles. Population, 6,802.

Situated in the northeastern part of the State, touching Maryland.

Bordered on the north and west by the Potomac river and the West Virginia Central and Pittsburg railroads.

### SOIL.

The main range of the Alleghany mountains pass through the centre of the county; fertile valleys, many of them broad and all exceedingly productive. Some of the finest farming land in the State is found here.

There is a rich loam in the valleys, that has produced fine crops for years with no fertilizer. Clay, limestone and slate soils predominate on higher lands.

Deposits of limestone and soft building sandstone are inexhaustible. There is a good hydraulic lime, and excellent common and hydraulic lime is made.

There is a fine quality of fire clay, but the extent of the deposits has not been determined.

### WATER.

The Potomac and Patterson rivers in the northern, and the North Fork and South Branch of the Potomac in the southern portion, with their tributaries, give an abundant supply.

Drinking water is pure and plentiful.

There are a great many sulphur and chalybeate springs in the county, the waters of which possess valuable medicinal qualities.

### ROADS.

In excellent condition; kept up by a road tax and enforced work of male citizens.

### COAL.

Is found in abundance, principally in the western section. Is exceptionally fine for coking. Mining has been confined to local demand.

### TIMBER.

A great deal has been marketed. About half the county is still covered with the virgin forest.

White and chestnut oak predominate; fine poplar, cherry and other varieties abound.

## FUEL.

Coal costs from \$1.00 to \$1.50 per ton at the mines and wood from 75 cents to \$1.00 per cord.

## COST OF LAND.

Good farm land costs from \$20.00 to \$40.00 per acre, and timber land from \$10.00 to \$15.00 per acre.

## FARM LABOR.

Appears to be a demand for good farm labor. Wages range from 50 cents to \$1.00 per day, including board.

## PRINCIPAL CROPS.

Corn and hay, yield of corn is from 25 to 50 bushels to the acre, and it sold last year for 50 cents per bushel.

Natural grass of good quality is prolific; rye, buckwheat, fruits of all kinds and vegetables grow to perfection.

Cattle raising is the principal industry. Cattle, sheep and hogs thrive; thousands are shipped every year, principally to the Baltimore, Washington and Philadelphia markets.

Poultry raising has assumed proportions in some sections.

## SOCIAL ADVANTAGES.

The county as a whole is not thickly settled. From 85 to 90 per cent. of the inhabitants are Americans, the remainder are principally German. Free school system is well developed, there being 65 in the county, also 35 churches and various social and fraternal organizations. As a rule, the inhabitants are educated and prosperous.

## GENERAL ADVANTAGES.

Healthful climate; mineral and pure waters plentiful; exceptional fine soil for agricultural purposes. A wealth of coal, iron, lime and sandstone; abundance of good timber land. Roads in good condition.

A railroad running through the centre of the county has been surveyed.

Prospects of future development of the unusual natural resources are good.

The principal towns are Petersburg and Bayard.

## PETERSBURG.

Situated in the southern part in the fertile valley of the South Branch of the Potomac, has a population of about 350. The nearest accessible railroad point is about 38 miles.

## BAYARD.

Situated on the West Virginia Central and Pittsburg railroad, in the northwestern corner; has direct connection with the eastern markets. Population about 200.

## FACTS AND FIGURES.

Grant county has 304,293 acres of land, assessed 1896 at \$1,518,112; town lots assessed at \$14,070; buildings at \$322,417; personal property at \$516,620; total assessed value, all personal property and of real estate, \$2,371,219.

Personal property consists in part of:

2,415 horses and mules assessed at	\$43,836.
6,364 cattle	75,634.
9,169 sheep	12,597.
1,547 hogs	3,622.

12 manufacturing establishments, with \$176,498 invested capital, pay 120 employees \$50,396 yearly.

65 public schools, with 1,781 pupils enrolled, employed 70 teachers in 1896.

Value of school houses and school property, \$22,875.

35 churches, all denominations, have a membership of 1,385.

Value of church property, \$20,270.

622 farms of 209,906 acres are valued at \$2,102,990.

4,053 acres of land produced 1890, 37,439 bushels of wheat.

6,136 " " " " " 104,898 " " corn.

2,530 " " " " " 34,339 " " oats.

## GREENBRIER COUNTY.

Area, 1,050 square miles. Population, 18,034.

Situated in the southeastern part of the State. Borders on Virginia,



The Chesapeake and Ohio railroad passes through the southern portion from east to west.

The Greenbrier river flows through the eastern portion from the north toward the southwest.

### SOIL.

The extreme eastern and the western portions are mountainous. The central portion, comprising about one-half the county, is an elevated plateau, undulating, not hilly, and very fertile and productive.

Limestone and clay soils predominate.

Limestone, building sandstone and good fire clays are abundant.

Large deposits of marble, closely resembling the famous Tennessee stone, also a beautiful gray variety, has been discovered.

Forms part of the richest iron region of the State; oil has also been discovered, but the extent of the deposit not determined.

Fine limestone springs are numerous. Well supplied with clear, pure spring water. There are numerous sulphur and mineral springs around which are clustered pleasure and health resorts.

### WATER.

Greenbrier river in the east; Meadow river in the west, and numerous small rivers and creeks.

Supply of water for power purposes is exceptionally good.

### ROADS.

In good condition; good turnpike roads penetrate nearly every portion.

### COAL.

The Flat Top or New River coking coal field, from which the finest coke in the State is made, covers about a third of the county. This field is worked extensively in the adjoining (Fayette) county, but the mining in Greenbrier has been confined to the local demand.

### TIMBER.

From one-half to two-thirds of the county is still covered with the natural forest.

Some of the best timber land in the State is found here. All varieties peculiar to the climate.

Hard woods predominate. Supply of tanbark is practically unlimited.

Numerous rivers make the timber accessible to market.

### FUEL.

Cost of coal in the eastern part is about \$3.00 per ton, and in the western near the mines, about 75 cents.

Wood costs about \$1.00 per cord.

### COST OF LAND.

Good farm land ranges from \$15.00 to \$50.00 per acre; the average being about \$30. Fair timber land sells for \$10.00 per acre.

### FARM LABOR.

As a rule the supply is plentiful. There is a demand for good labor in some sections. Wages average about \$12.00 per month, including board.

### PRINCIPAL CROPS.

Yield to the acre of hay is about 2 tons, of corn 40 bushels, of wheat 20 bushels, and oats 40 bushels. Last year hay sold for \$5 per ton, corn 40 cents, wheat 80 cents and oats 20 cents per bushel.

All cereals, fruits and vegetables grow readily.

The luxuriant natural pasturage makes cattle raising the principal pursuit. Cattle are exceptionally fine and sought after in the markets. Considerable blooded stock is raised.

Cattle, sheep, hogs, poultry and dairy products are the principal exports.

The markets are in the east and the products have a reputation of their own.

### SOCIAL ADVANTAGES.

About 80 per cent. of the population are Americans; the others are principally Irish.

There are 147 free schools and a number of private institutions, among others two large female seminaries. Also 73 church edifices valued at \$75,517, and numerous social and fraternal organizations.

## GENERAL ADVANTAGES.

A mild, healthful climate; pure medicinal and mineral waters; sections rich in a variety of mineral products; extensive tracts of good timber land.

Fertile and productive soil. Conditions for grazing and general agriculture exceptionally fine. Transportation facilities good.

The county is most highly favored with natural resources.

Future development promising.

It is a beautiful country and well dotted with towns and villages.

There are extensive tracts to be developed.

Lewisburg and Ronceverte are the principal towns.

## LEWISBURG

Is the principal town and the county seat. Has a population of about 1,000. Is situated in the southwestern part, near the Chesapeake and Ohio railroad. Lewisburg Female Institute is located here.

## RONCEVERTE

Has a population of about 400; is situated on the Chesapeake and Ohio railroad, and is an important shipping point for a prosperous agricultural region.

## FACTS AND FIGURES.

Greenbrier county has personal property assessed 1896 at \$1,-294,882; total assessed value, all personal property and of real estate, \$5,917,104.

Personal property consists in part of:

4,885 horses and mules assessed at	\$172,449.
12,140 cattle	223,558.
8,410 sheep	22,919.
834 hogs	3,806.

47 manufacturing establishments, with \$441,003 invested capital, pay 276 employees \$80,092 yearly.

147 public schools, with 4,871 pupils enrolled, employed 176 teachers in 1896.

Value of school houses and school property, \$64,386.

73 churches, all denominations, have a membership of 4,185.

Value of church property, \$75,517.

1,872 farms of 380,538 acres are valued at \$4,350,750.

7,646	acres	of	land	produced	1890,	95,31	bushels	of	wheat.
13,413	"	"	"	"	"	289,200	"	"	corn.
8,688	"	"	"	"	"	161,541	"	"	oats.

## HAMPSHIRE COUNTY.

Area, 550 square miles. Population, 11,419.

Situated in the northeastern part of the State. Borders on Maryland on the North and Virginia on the east.

The Potomac river, Baltimore and Ohio railroad and the Chesapeake and Ohio canal, running side by side, form the northern boundary.

A branch of the Baltimore and Ohio railroad penetrates and extends to about the centre of the county.

## SOIL.

Surface is mountainous or hilly, not over one-fifth of the area being level.

Valleys are broad, parts of them being rolling or hilly. River bottom land is plentiful and well adapted to agriculture, as the hill and mountain land is to grazing.

Clay and dark sandy loam predominate.

The county has rich and extensive deposits of iron ore; also considerable paying deposits of manganese, plumbago and traces of lead, copper, gold, silver and tin. There are also extensive beds of a fine variety of black marble, and white marble in smaller quantities. Limestone valuable for building and burning is found throughout the county, also good sandstone and a fine grade of glass sand.

Fine clays are abundant good potters clay is found.

## WATER.

The South Branch of the Potomac flows through the entire western portion; the North river through the central, and the Capon river in the eastern portion. The general direction of all the water courses is from south to north.

The county is well supplied. Pure drinking water is abundant. There are a number of sulphur, iron and chalybeate springs. These springs, one in particular, the Capon, have been health resorts for many years.

### ROADS.

In fair condition; kept up by a road tax and enforced work of male citizens.

### COAL.

Considerable coal, both bituminous and anthracite, exists, but has not been mined or the extent of the deposits determined.

### TIMBER.

A great deal has been cut, but large tracts of fine timber remain; hickory, oak and other hard woods predominate.

Tanbark is plentiful. The large rivers afford cheap transportation for logs.

### FUEL.

Coal costs from \$2.75 to \$3.00 per ton, and wood from \$1.50 to \$2.00 per cord.

### COST OF LAND.

Good farm land costs from \$10.00 to \$50.00 per acre. Timber land costs from \$5.00 to \$10.00 per acre.

### FARM LABOR.

As a rule the supply is sufficient, though in some sections there appears to be a demand for good laborers. Wages average about \$12.00 per month, including board.

### PRINCIPAL CROP.

Corn; averages about 20 bushels to the acre, and sold as high as 60 cents a bushel last year.

The other cereals, garden truck and fruits grow well.

Blue grass is prolific and the county is peculiarly adapted to grazing. The cattle are well known in the eastern markets. Sheep thrive with little care.

Cattle and sheep are the principal source of wealth; they are shipped in large numbers.

### SOCIAL ADVANTAGES.

As a rule the inhabitants are educated and prosperous. About 95 per cent. are Americans, some few Germans and negroes. There are 109 free schools, numerous private and a normal institute, also 62 church edifices valued at \$46,875.

Educational and social advantages are good.

### GENERAL ADVANTAGES.

Climate is healthful and mild; soil productive; conditions for agriculture, stock raising in particular, are exceptionally good.

A wealth of undeveloped mineral resources.

Shipping facilities are good; county roads in fair condition.

Portions of the county have been long settled, but large tracts favorably situated offer good opportunity for development.

### ROMNEY.

The county seat and the principal town, has a population of about 500, is situated in the central eastern portion at the terminus of a branch of the Baltimore and Ohio railroad. It is an important business centre for a prosperous agricultural region.

### FACTS AND FIGURES.

Hampshire county has 403,563 acres of land assessed 1896 at \$1,518,530; town lots assessed at \$36,840; buildings at \$457,280; personal property at \$796,502; total assessed value, all personal property and of real estate, \$2,803,152.

Personal property consists in part of:

4,146 horses and mules assessed at	\$116,036.
6,385 cattle	" " 94,301.
10,335 sheep	" " 20,536.
629 hogs	" " 2,994.

42 manufacturing establishments, with \$247,974 invested capital, pay 128 employees \$40,177 yearly.

109 public schools, with 2,790 pupils enrolled, employed 116 teachers in 1896.

Value of school houses and school property, \$22,097.

62 churches, all denominations, have a membership of 3,278.

Value of church property, \$46,875.  
 1,365 farms of 342,662 acres are valued at \$2,428,110.  
 8,914 acres of land produced 1890, 79,906 bushels of wheat.  
 11,755 " " " " " 192,153 " " corn.  
 5,631 " " " " " 78,649 " " oats.

## HANCOCK COUNTY.

Area, 92 square miles. Population, 6,414.

The northernmost county in the State. The Ohio river forms the western and northern boundary, and is skirted for almost the entire distance by the Pittsburg, Cincinnati, Chicago and St. Louis railroad.

### SOIL.

Rich and productive. The surface is largely hilly. Bottom land is plentiful; an exceptionally good agriculture and grazing district.

Limestone is found in abundance, also good building sandstone and a fine variety of flagstone.

The deposits of fire clay of an excellent quality are inexhaustible. The pottery and brick industry of the county are very extensive.

Both oil and natural gas have been discovered and are utilized to some extent.

### WATER.

The Ohio river on the north and west, and Thomasouls run on the south, also numerous large creeks. The supply of drinking water is abundant and of good quality.

### ROADS.

In good condition; kept up by general road tax and enforced work of male citizens.

### COAL.

Three workable veins underlie the entire county. It is a good soft fuel coal used largely in the pottery and brick works.

Two commercial mines operated. Production, year ending June 30, 1897, reported by the State Mine Inspector, 33,838 tons.

## FUEL.

Coal costs \$1.00 per ton at the mine and wood from \$2.00 to \$3.00 per cord.

Practically all the commercial timber has been cut. There is abundant left for agricultural and fuel purposes.

## COST OF LAND.

The average cost of farm land is about \$20.00 per acre.

## FARM LABOR.

The supply appears to be abundant. Wages range from \$12.00 to \$15.00 per month, including board.

## PRINCIPAL CROP.

Wheat, corn and oats. The yield of wheat is about 20 bushels, corn 25 bushels, and oats 30 bushels to the acre. Last year wheat sold for 85 cents, corn 50 cents, and oats 25 cents per bushel.

Vegetables and fruits of all kinds grow well.

The apple orchards are very extensive and exceptionally fine.

The manufacturing interests of the county are large and give a good local market for the agricultural products.

Shipping facilities are good, and the Pittsburg, Wheeling and other markets are within easy reach.

## SOCIAL ADVANTAGES.

The educational advantages are good. The inhabitants are, as a rule, educated and prosperous. From 90 to 95 per cent. of them are Americans; a few Irish, Italians and Hungarians.

There are 24 free schools, and 12 churches, also social and fraternal organizations.

## GENERAL ADVANTAGES.

A fertile soil and healthful climate; agricultural interests well developed. In close proximity to good markets.

The transportation facilities are all that could be desired.

Rich natural resources, some of which have been extensively developed, giving diversity of employment.



## NEW CUMBERLAND

Is the principal city. It has a population of 2,300, and is situated on the Pittsburg, Cincinnati, Chicago and St. Louis railroad, about 49 miles from Pittsburg and 37 from Wheeling. The manufacture of tile and brick is the principal industry of the city and the immediate vicinity. In 1892 there were 70,000,000 brick made in the county.

The manufacturing interests have been steadily increasing.

## FACTS AND FIGURES.

Hancock county has 53,016 acres of land, assessed 1896 at \$1,-034,447; town lots assessed at \$86,853; buildings at \$668,983; personal property at \$605,168; total assessed value, all personal property and of real estate, \$2,395,453.

Personal property consists in part of:

1,348 horses and mules assessed at	\$36,666.
1,760 cattle	" " 24,024.
4,703 sheep	" " 4,654.
208 hogs	" " 1,201.

30 manufacturing establishments with \$225,788 invested capital, pay 250 employees \$110,006 yearly.

24 public schools, with 1,417 pupils enrolled, employed 36 teachers in 1896.

Value of school houses and school property, \$26,186.

12 churches, all denominations, have a membership of 1,741.

Value of church property, \$75,600.

408 farms of 47,735 acres are valued at \$2,245,050.

2,254 acres of land produced 1890, 31,155 bushels of wheat.

2,594 " " " " " 77,714 " " corn.

2,645 " " " " " 74,696 " " oafs.

## HARDY COUNTY.

Area, 400 square miles. Population, 7,567.

Situated in the northeastern part of the State. Borders on Virginia.

## SOIL.

The surface is mountainous. The valleys are numerous, broad

and fertile. Loam, exceedingly productive, predominates in the valleys. Clay, somewhat sandy, and slate and limestone on the hills and mountains.

The bottom land is the finest agricultural land in the State, and the hilly sections are exceptionally fine for grazing.

The deposits of iron are among the richest.

Limestone and sandstone of a good quality are found in abundance in every part of the county. The limestone makes a good quality of lime.

Considerable quantities of excellent fire clay and also pipe and potters clays have been discovered and worked to some extent.

### WATER.

The South Branch of the Potomac flows through the western part from south to the north. The Last river is in the eastern portion. These rivers have numerous tributaries.

Springs are abundant and pure drinking water plentiful. Excellent sulphur springs are found in various parts of the county and also alum and chalybeate waters.

### ROADS.

Are in good condition; graded and kept up under authority of the county.

### TIMBER.

About three-fourths of the county is wooded and about one-fourth is good mercantile timber. The principal varieties are oak, pine and poplar. There is also considerable walnut, hickory and ash.

Tanbark is plentiful, considerable is exported and large quantities used in the local tanneries.

### FUEL.

Bituminous coal costs \$3.20 per ton; anthracite, \$6.50 per ton, and wood from \$1.50 to \$2.00 per cord.

### COST OF LAND.

The best farm land sells at from \$25.00 to \$100.00 per acre; the uplands from \$3.00 to \$10.00 per acre, and timber land from \$5.00 to \$15.00 per acre.

## FARM LABOR.

The supply is sufficient. Wages are 50 cents per day, including board, and 75 cents per day without board.

## PRINCIPAL CROPS.

Corn; the yield per acre is from 30 to 50 bushels, and even as high as 100 bushels; sold last year from 30 to 50 cents per bushel.

Wheat, oats and other cereals, also vegetables and fruits. Apples and pears are exceptionally fine. Blue grass, clover and timothy grow well.

The raising of cattle, hogs, sheep and poultry is the principal industry. The cattle are very large and fine. Numbers are shipped to the Baltimore, New York and Philadelphia markets, also to Liverpool and European ports.

The best quality of grasses grow naturally and the cattle industry is unusually profitable.

Some of the best agricultural land in the State is found in this county.

## SOCIAL ADVANTAGES.

While the county is not thickly settled some portions have been under cultivation for more than 100 years. The inhabitants are prosperous and educated; fully 95 per cent. are Americans; a few Germans and negroes.

Seventy-eight free schools and some private institutions; also 35 churches and numerous social and fraternal organizations are scattered through the county.

## GENERAL ADVANTAGES.

Pure mountain air, healthful and invigorating. While no coal has been discovered, the other natural resources are unusually rich. Soil is fertile and productive and some of it has been worked for 100 years, received practically no fertilizer, and is now as good as ever. The conditions for cattle raising are as good as any in the State.

Pure and healthful mineral waters are abundant. Roads are good. Inhabitants, as a rule, are prosperous and contented.

## MOOREFIELD.

Is the principal town and the county seat. Population, 500.

Situated on the South Branch of the Potomac river about the centre of the eastern portion. Romney, about 27 miles down the river, is the nearest railroad point.

The county has its share of smaller towns which are well scattered.

### FACTS AND FIGURES.

Hardy county has 369,815 acres of land assessed 1896 at \$1,496,146; town lots assessed at \$36,312; buildings at \$432,939; personal property at \$732,392; total assessed value, all personal property and of real estate, \$2,697,789.

Personal property consists in part of:

3,049 horses and mules assessed at	\$94,610.
6,141 cattle	" " 118,392.
8,008 sheep	" " 13,880.
2,082 hogs	" " 7,227.

78 public schools, with 1,877 pupils enrolled, employed 81 teachers in 1896.

Value of school houses and school property, \$14,541.

35 churches, all denominations, have a membership of 1,900.

Value of church property, \$28,045.

637 farms of 195,029 acres are valued at \$1,847,870.

3,797 acres of land produced 1890, 37,067 bushels of wheat.

7,116 " " " " " 137,335 " " corn.

2,180 " " " " " 31,626 " " oats.

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### HARRISON COUNTY.

Area, 464 square miles. Population, 21,919.

Situated in the north central part of the State.

The West Fork of the Monongahela river flows through the centre from south to north. The Baltimore and Ohio railroad crosses the county from east to west; the West Virginia and Pittsburg railroad enters it from the south and the Monongahela River railroad from the north. All three roads form a junction at about the centre of the county.

### SOIL.

Surface is rolling with low hills; all suitable for agricultural purposes. Sandstone, lime and clay soils predominate; fertile and productive.

One of the best agricultural counties.

The limestone is of a fine quality and the deposits are extensive. Sandstone, valuable for building purposes, is abundant.

Iron ore abounds in all parts of the county.

There are extensive deposits of brick and potters clays. Large numbers of bricks are made and exported. There are several extensive pottery works.

Oil has been discovered. Natural gas has been in use many years; the supply is apparently inexhaustible; the wells are among the largest and the strongest in the country.

### WATER.

The West Fork of the Monongahela river, Hackers Creek, Pecks Run and numerous smaller streams.

The supply is plentiful; drinking water is good.

### ROADS.

In a fair condition. Kept up by taxation and enforced work of male citizens.

### COAL.

The county comprises the best parts of the great Pittsburg coal field. Mining operations have been carried on for many years and are very extensive. The finest bituminous coal exists in great abundance. Great quantities are shipped to both the eastern and western markets.

Nine commercial mines operated. Production, year ending June 30, 1897, reported by the State Mine Inspector, 221,249 tons.

### FUEL.

It being one of the oldest settled counties, most of the commercial timber has been cut. Plenty remains for domestic purposes. Coal is so abundant there is no market for cord wood.

Coal costs about 65 cents per ton at the mine.

### COST OF LAND.

Good farm land costs from \$30.00 to \$60.00 per acre, averaging about \$40.00.

### FARM LABOR.

The supply is generally sufficient; there appears to be a scarcity

in some sections. Wages average about 80 cents per day, including board.

### PRINCIPAL CROP.

Corn. The average yield is from 25 to 75 bushels to the acre. Last year it sold for 40 cents and 50 cents per bushel.

Cereals; garden products of all kinds and fruits, especially apples, peaches and pears, are grown extensively.

Grazing and stock raising is the principal industry. The rich limestone soil produces the finest kind of blue grass sod, is well watered and the cattle are as fine as any raised in the State.

Immense quantities of cattle, sheep and other animals are shipped to New York, Philadelphia and Baltimore.

The dairy and poultry products are very extensive.

Agriculture is the principal source of wealth.

### SOCIAL ADVANTAGES.

Is one of the oldest settled counties in the State, and has been generally cleared of its timber.

The inhabitants are educated and prosperous, most of them own their own homes, especially in the agricultural districts.

About 85 per cent. are Americans; there are some foreigners, principally in the mining districts. There are 161 free schools, also two private colleges with an enrollment of more than 300 students; 102 churches and social and fraternal societies.

### GENERAL ADVANTAGES.

Climate is mild and healthful; soil is productive; greater portion has been cleared of timber and is ready for agriculture.

The limestone soil is especially desirable for fruits and grasses. The mineral resources are unsurpassed in quality or quantity. The shipping facilities are all that could be desired.

### CLARKSBURG

Is the county seat. It is situated near the center of the county at the junction of three railroads. It has a population of over 3,000. Is a commercial town with some manufacturing and is in the midst of a splendid agricultural country.

There are handsome public buildings and much wealth,

The Broadus College, an educational institution having within the neighborhood of 200 students, is located here.

The county is well dotted with small towns.

## FACTS AND FIGURES.

Harrison county has 275,193 acres of land assessed 1896 at \$4,-069,256; town lots assessed at \$619,808; buildings at \$1,414,955; personal property at \$2,161,618; total assessed value, all personal property and of real estate, \$8,266,237.

Personal property consists in part of:

7,753 horses and mules assessed at	\$194,247.
13,819 cattle	" " 233,604.
25,747 sheep	" " 42,945.
1,486 hogs	" " 6,022.

93 manufacturing establishments, with \$464,246 invested capital, pay 383 employees \$106,201 yearly.

161 public schools, with 5,675 pupils enrolled, employed 197 teachers in 1896.

Value of school houses and school property, \$85,136.

102 churches, all denominations, have a membership of 7,234.

Value of church property, \$138,350.

2,198 farms of 254,388 acres are valued at \$7,537,690.

10,521 acres of land produced 1890, 119,089 bushels of wheat.

13,421 " " " " " 419,589 " " corn.

3,614 " " " " " 64,713 " " oats.

## JACKSON COUNTY.

Area, 470 square miles. Population, 19,021.

Situated in the central western part of the State. Borders on the Ohio river for more than 25 miles, along the bank of which runs the Ohio River railroad.

The Ravenswood, Spencer and Glenville, a branch of the Ohio River railroad, passes through the northern part from west to east, and Ripley and Mill Creek Valley extends from the Ohio river to Jackson, the county seat, toward the southern part of the county.

## SOIL.

Surface generally rolling, some high plateaus and well watered

valleys. Sandy and clay loam predominates; considerable lime and soapstone soil.

River bottom lands are extensive. One of the leading agricultural counties. Limestone exists in some portions. Good sandstone for building purposes is abundant.

Iron ore has been discovered, but the deposits have not been developed.

Oil exists in limited quantities, but has not been utilized.

#### WATER.

The Ohio river in the north and west; Pond creek, Sand creek, Mill creek, Poca river and numerous other streams in the interior. The supply is abundant and of good quality for all purposes.

#### ROADS.

In fair condition; kept up by county authorities under system of road taxation.

#### COAL.

Found in limited quantities. The veins generally lie deep in the earth. The mining operations are confined to the local demand.

#### TIMBER.

Most of the commercial timber has been marketed. Not more than a fifth of the county is covered with valuable timber.

Oak, poplar, hickory and pine are the leading varieties.

#### FUEL.

Coal at the bank costs 75 cents per ton, delivered, from \$1.50 to \$2.50 per ton. Wood costs from 50 cents to \$2.00 per cord, depending on locality.

#### COST OF LAND.

Good farm land costs from \$10.00 to \$20.00 per acre, some of the best is as high as \$50.00 per acre. Timber land will average about \$10.00 per acre.

#### FARM LABOR.

The supply is generally sufficient. Wages average 50 cents per day, including board.



## PRINCIPAL CROP.

Corn; average yield is generally from 30 to 35 bushels to the acre. Sold for about 40 cents per bushel last year.

Is pre-eminently an agricultural county. Some of the finest farms in the Ohio valley are located here. The cereals, vegetables and fruits grow well. The entire county is either excellent land for cultivation or grazing. A portion has limestone soil, which is especially fine for the blue grass.

Cattle, sheep, hogs and poultry are raised in great numbers. The land is peculiarly adapted to sheep raising; the sheep require but comparatively little care and are very profitable.

The transportation facilities by both land and water are excellent. Large numbers of cattle and quantities of produce are shipped every year to both the eastern and western markets.

## SOCIAL ADVANTAGES.

As a rule the inhabitants are well educated and prosperous. About 95 per cent. are Americans; there are some Germans, French and English. There are 174 free schools and 119 churches in the county, and the usual number of social and fraternal organizations.

## GENERAL ADVANTAGES.

Climate is healthful and mild. Soil is productive and sufficiently cleared of timber to permit of extensive cultivation.

Grazing land is as good as any in the State; the cattle and sheep are exceptionally fine and easily raised.

The shipping facilities are all that could be desired.

An exceptionally fine agricultural county. The principal towns are Ravenswood and Ripley.

## RAVENSWOOD.

Has a population of about 900. Is situated on the Ohio river and the Ohio River railroad at the junction with the Ravenswood, Spencer and Glenville branch.

It is an important shipping point by both rail and water.

## RIPLEY.

Population about 500. Is situated at the terminus of the Ripley and Mill Creek Valley railroad in the south central portion of the county, and is the centre of a prosperous agricultural region.

## FACTS AND FIGURES.

Jackson county has 291,324 acres of land assessed 1896 at \$2,-086,722; town lots assessed at \$62,455; buildings at \$464,034; personal property at \$715,235; total assessed value, all personal property and of real estate, \$3,316,316.

Personal property consists in part of:

4,507 horses and mules assessed at	\$151,915.
6,935 cattle	" " 97,890.
11,144 sheep	" " 11,875.
524 hogs	" " 3,105.

39 manufacturing establishments, with \$94,408 invested capital, pay 166 employees \$43,510 yearly.

174 public schools, with 6,057 pupils enrolled, employed 183 teachers in 1896.

Value of school houses and school property, \$65,623.

119 churches, all denominations, have a membership of 4,788.

Value of church property, \$55,275.

2,051 farms of 235,930 acres are valued at \$3,745,440.

11,421 acres of land produced 1890, 106,725 bushels of wheat.

17,656 " " " " " 401,648 " " corn.

3,505 " " " " " 53,893 " " oats.

## JEFFERSON COUNTY.

Area, 280 square miles. Population, 15,553.

Is the easternmost county in the State. Borders on Maryland and Virginia.

The Potomac river forms the northern boundary, and the Shenandoah river flows through the eastern part from southwest to northeast.

The main line of the Baltimore and Ohio railroad passes through the northern part, and a branch of the same extends into the southwestern portion. The Norfolk and Western railroad runs through the centre of the county north and south, and the Chesapeake and Ohio canal skirts the entire northern boundary.

## SOIL.

Beautiful, level or rolling rich farming land. A very small portion is rough and rugged. A rich loam or limestone soil covers

practically the entire county, and makes one of the best farming regions in either Virginia or West Virginia.

Iron ore of an excellent quality has been found in almost inexhaustible quantities.

Limestone is abundant; lime is manufactured. Large deposits of it make an excellent building stone and is in great demand in the Washington city markets. Hydraulic cement of a superior quality is also manufactured from the lime found here.

There are extensive deposits of a beautiful variety of marble.

### WATER.

Springs are abundant; drinking water of the best quality is plentiful. The Potomac and Shenandoah rivers and their numerous tributaries reach all sections.

### ROADS.

In excellent condition; kept up by county authority; a road tax of about 15 cents on the \$100 valuation.

### TIMBER.

There are no large tracts. Considerable of an excellent quality exists in small pieces. The principal varieties are black, white and red oak and chestnut, some walnut and hickory.

The supply is not sufficient for extensive lumbering, though considerable is cut and used in the pulp mills of the county.

### FUEL.

No deposits of coal have been found in the county. Bituminous coal costs about \$3.00 and anthracite about \$6.00 per ton. Wood costs from \$2.00 to \$2.50 per cord.

### COST OF LAND.

Good farm land costs from \$30.00 to \$60.00 per acre, averaging about \$40.00. Timber land costs from \$40.00 to \$80.00 per acre.

### FARM LABOR.

The supply is abundant. Wages are from \$10.00 to \$12.00 per month, including board.

## PRINCIPAL CROP.

Wheat; yield is from 20 to 25 bushels to the acre, and sold last year for about 90 cents per bushel.

Corn is the second crop in importance. All the cereals, vegetables and fruits, principally apples, peaches and pears, are cultivated extensively.

The limestone soil brings magnificent blue grass. Cattle raising is a leading pursuit. The dairy and poultry products are very important.

The shipping facilities are excellent, great numbers of cattle and a large proportion of the other products are exported.

## SOCIAL ADVANTAGES.

The county was among the first in the State to be settled. The inhabitants are noted for their industry and prosperity. More than 95 per cent. are Americans, there are a few Germans and Irish.

There are 51 free schools, a branch of the State Normal School and a number of private institutions, also 62 churches and Masonic, Odd Fellow, Grange and other fraternal organizations.

## GENERAL ADVANTAGES.

The county lies in the best part of the productive valley of the Shenandoah. The climate is mild, invigorating and healthful.

The soil is wonderfully productive; all agricultural products are cultivated extensively and profitably. The conditions for cattle raising are exceptionally good.

Facilities for shipping produce are excellent; all parts of the county are in close touch with railroads. Good and extensive markets are in easy reach.

Charlestown and Harper's Ferry are the principal towns.

## CHARLESTOWN.

The county seat, has a population of 2,287. The Norfolk and Western and the Baltimore and Ohio railroads pass through the town. Some manufacturing is done, but it owes its importance principally to the fact that it is the centre of a rich agricultural district.

## HARPER'S FERRY.

Population about 1,000. Is situated at the junction of the Shenandoah and Potomac rivers, and is an important shipping point for both the canal and railroads. It has extensive business and manufacturing interests. In addition to the free schools, the Storer College, a private institution with about 300 students, is located here.

## FACTS AND FIGURES.

Jefferson county has 132,723 acres of land assessed 1896 at \$3,006,897; town lots assessed at \$241,964; buildings at \$1,862,390; personal property at \$1,501,154; total assessed value, all personal property and of real estate, \$6,619,405.

Personal property consists in part of:

5,474 horses and mules assessed at	\$164,151.
5,284 cattle	" " 80,655.
13,045 sheep	" " 31,226.
2,078 hogs	" " 11,232.

49 manufacturing establishments with \$792,282 invested capital, pay 355 employees \$98,413 yearly.

51 public schools, with 3,812 pupils enrolled, employed 72 teachers in 1896.

Value of school houses and school property, \$45,480.

62 churches, all denominations, have a membership of 4,959.

Value of church property, \$181,900.

639 farms of 109,461 acres are valued at \$4,354,220.

27,578 acres of land produced 1890, 412,701 bushels of wheat.

18,343 " " " " " 581,560 " " corn.

514 " " " " " 12,412 " " oats.

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## KANAWHA COUNTY.

Area, 825 square miles. Population, 42,756.

Situated slightly to the southwest of the center of the State. The Great Kanawha river, with the Chesapeake and Ohio railroad on the south bank, and the Kanawha and Michigan railroad on the north bank run parallel through the entire county from the southeast to the northwest. The Elk river, with the Charleston,

Clendennin and Sutton railroad on the south bank, flows for 20 miles through the county.

Several short railroads extend from the three main lines into the interior.

### SOIL.

The surface is mountainous in the south and east and high and rolling in character in other sections. The soil is generally black loam with red clay subsoil.

Iron ore of greater or less value is found in every part of the county. Salt deposits are very extensive; the brine is strong and the salt is of a fine quality and is exported in great quantities.

Sulphur, alum and other mineral waters are found and utilized to some extent.

Natural gas and oil have been discovered. The gas is used in the manufacture of salt.

Excellent brick and fire clays, also a fine building sandstone exist in abundance.

Good limestone and glass sand are found in some sections.

### WATER.

The Great Kanawha river; the Elk flowing from the eastern extremity joins the Kanawha near the centre of the western portion. The Pocataligo river in the northern section; the Coal river and the Blue and Falling creeks in the west and south; also numerous smaller streams.

Pure drinking water is abundant and mineral waters of medicinal virtue in some sections.

### COAL.

Bituminous coal of almost every variety is found in abundance. The veins run in all directions.

The splint, steam, gas, fuel, coking, cannel and semi-cannel varieties are mined.

The mining operations are extensive, especially in the Kanawha river section.

Thirty-six commercial mines are operated. Production, year ending June 30, 1897, reported by the State Mine Inspector, 1,042,745 tons.

### TIMBER.

About half the county is still in the original forest. Oak, pop-

lar, chestnut, hickory and some walnut are the principal woods left.

Great quantities of timber have been cut, especially near the water courses.

### FUEL.

The average cost of coal is about \$1.00 a ton and of wood about \$1.25 per cord; both are plentiful and but little is sold in the local markets.

### COST OF LAND.

Good farm land costs from \$10.00 to \$15.00 per acre, some of the best going as high as \$50.00 per acre. Timber land costs from \$6.00 to \$20.00 per acre.

### FARM LABOR.

The supply is generally sufficient, though there appears to be a scarcity in some sections.

Wages range from \$10.00 to \$19.00 per month, including board.

### PRINCIPAL CROP.

Corn; the average yield is from 30 to 40 bushels per acre and the selling price last year about 40 cents per bushel.

Wheat, oats, potatoes and fruits are among the leading products. All vegetables grow well; the apples, peaches and pears are particularly fine.

Some sections are peculiarly adapted to grazing and hay and cattle are there the leading products.

### SOCIAL ADVANTAGES.

In some sections the population is almost entirely American, in others, principally the mining regions, there are a considerable number of foreigners. There are 221 free schools, some industrial, and a number of private institutions, also 145 churches and numerous social and fraternal organizations. The West Virginia Colored Institute is located at Farm and the Shelton College at St. Albans, in this county.

### GENERAL ADVANTAGES.

The county is third in size and first in population. The population is to a considerable extent concentrated in the large cities.

and the mining regions. Much the larger portion is devoted to agriculture.

The soil is fertile and productive; climate healthful; water supply abundant, and the mineral resources unexcelled. Good timber land is still abundant.

Railroads extend into every section and a large navigable river flows through its entire length.

Large cities and mining camps furnish good local markets for agricultural products.

Charleston and Elk City are among the principal cities.

### CHARLESTON.

The capital of the State, is a flourishing commercial city. Is a railroad centre and the centre of an extensive mining region. The city has a number of wholesale commercial houses, banks and extensive manufactories; has paved streets, electric light, gas, and water works, good sewerage, electric street railways and other features of a completed city.

### ELK CITY.

Adjoins Charleston, the population of the two places being about 10,000.

### FACTS AND FIGURES.

Kanawha county has 555,213 acres of land assessed 1896 at \$3,-053,579; town lots assessed at \$1,629,980; buildings at \$2,201,645; personal property at \$2,067,523; total assessed value, all personal property and of real estate, \$8,952,727.

Personal property consists in part of:

5,314 horses and mules assessed at	\$156,493.
9,374 cattle	104,901.
3,537 sheep	3,898.
1,296 hogs	4,319.

70 manufacturing establishments with \$1,015,973 invested capital, pay 886 employees \$304,862 yearly.

221 public schools, with 10,488 pupils enrolled, employed 271 teachers in 1896.

Value of school houses and school property, \$108,291.

145 churches, all denominations, have a membership of 9,462.

Value of church property, \$250,462.

2,440 farms of 236,900 acres are valued at \$3,515,740.



9,701	acres of land produced 1890,	84,462	bushels of wheat.
24,622	" " " " " "	508,529	" " corn.
7,394	" " " " " "	92,570	" " oats.

## LEWIS COUNTY.

Area, 400 square miles. Population, 15,895.

Situated slightly to the north of the centre of the State. The West Fork of the Monongahela river rises in the southern part and flows northward, traversing the centre of the county.

The West Virginia and Pittsburg railroad runs through the centre from north to south and a branch of the same road extends eastward into the adjoining county.

## SOIL.

Limestone, clay and loam; well adapted to grazing; is fertile and very productive. The surface is generally rolling, some portions hilly.

Sandstone and limestone of good quality are abundant. An excellent quality of fire clay and good potters clay are found in large quantities. The brick and pottery industries of the county are of considerable importance.

There is also a good quality of glass sand and a fine deposit of yellow ochre.

Natural gas and oil have been discovered and are utilized.

## WATER.

The West Fork of the Monongahela river and its numerous tributaries water every part of the county well. Pure, wholesome drinking water is plentiful.

## ROADS.

Generally in good condition; kept up by road tax.

## COAL.

Veins of valuable coal are found throughout the county. Considerable has been mined for local use. No commercial mines have as yet been operated.

## TIMBER.

The county was among the first in the State to be settled and most of the valuable timber has been cut.

Considerable tracts remain, however. Possibly half the county is woodland, and some lumbering is done. The remaining woods are principally oak, poplar, hickory and chestnut.

## FUEL.

Coal costs about 75 cents per ton at the bank and about \$1.40 delivered. Wood costs from 65 cents to \$2.00 per cord.

## COST OF LAND.

Good farm land costs from \$10.00 to \$30.00 per acre, and timber land from \$10.00 to \$15.00 per acre.

## FARM LABOR.

There appears to be a demand for good laborers in some sections. Wages range from 50 to 75 cents per day, including board.

## PRINCIPAL CROP.

Corn; the average yield is about 30 bushels to the acre; in some sections it is 60, while in others it goes as high as 100 bushels to the acre; it sold last year for 30 to 40 cents per bushel.

It is one of the finest agricultural and grazing counties.

The cereal crops and vegetables are exceptionally fine. Apples, peaches, cherries and other fruits are grown in abundance.

The county is especially noted for its cattle and stock. Some of the finest in the State are grown here. Blooded stock are cultivated to a considerable extent.

Large droves of cattle are shipped every year, principally to the New York, Philadelphia and Baltimore markets.

Agriculture and cattle raising are the principal sources of wealth.

## SOCIAL ADVANTAGES.

The inhabitants are well educated and prosperous, the large majority of them owning their own homes and farms. Fully 90 per cent. are Americans; some Irish and Germans. There are 123 free schools and 76 churches in the county.

The county ranks among the first for social advantages.

## GENERAL ADVANTAGES.

The climate is mild, dry and healthful. The soil is fertile, productive and rich in natural resources.

The grazing districts are exceptionally fine; cattle raising is profitable. The entire county is a good agricultural county.

Shipping facilities are good; country roads are in good condition and connect all parts of the county.

## WESTON.

The county seat, is situated near the centre of the county at the junction of the two railroads. It has more than 2,000 inhabitants and is the centre of a prosperous agricultural community.

The State Asylum for the Insane is located here.

## FACTS AND FIGURES.

Lewis county has 245,627 acres of land assessed 1896 at \$2,248,870; town lots assessed at \$208,436; buildings at \$393,781; personal property at \$955,471; total assessed value, all personal property and of real estate, \$3,806,558.

Personal property consists in part of:

4,693 horses and mules assessed at	\$99,190.
10,806 cattle	" " 139,963.
16,950 sheep	" " 26,574.
788 hogs	" " 2,794.

46 manufacturing establishments with \$176,615 capital invested, pay 111 employees \$36,904 yearly.

123 public schools, with 4,218 pupils enrolled, employed 139 teachers in 1896.

Value of school houses and school property, \$55,241.

76 churches, all denominations, have a membership of 5,228.

Value of church property, \$80,850.

1,557 farms of 225,203 acres are valued at \$4,465,870.

7,186 acres of land produced 1890, 68,714 bushels of wheat.

10,500	"	"	"	"	"	306,949	"	"	corn.
1,458	"	"	"	"	"	19,953	"	"	oats.

## LINCOLN COUNTY.

Area, 460 square miles. Population, 11,246.

Situated in the southwestern part of the State.

The Guyandotte river navigable for pushboats, flows through the south and western portion.

The nearest railroad is in the adjoining county, Kanawha, distance about 18 miles from the county seat of Lincoln and but a few miles from its eastern border.

## SOIL.

A black loam with a red clay subsoil predominates. The surface is rather mountainous in the southern and hilly or rolling in the other sections.

The soil is fertile; the entire county is good agricultural land

A large portion is well adapted to grazing.

Good limestone and sandstone for building purposes and fire clays are abundant.

## WATER.

The Coal river forms the southern and eastern boundary; the Guyandotte river is in the western portion while the Mud river is nearer the centre. There are numerous tributaries to these three main streams.

There is a plentiful supply of pure drinking water.

## ROADS.

In excellent condition; kept up by enforced work of male citizens. The road connecting the county with the railroad in Kanawha county is exceptionally good.

## COAL.

Almost the entire county is underlaid with magnificent coal deposits. It lies in the midst of one of the largest areas of pure cannel coal in the world.

The mining operations have been confined entirely to supplying the local market.

## TIMBER.

Fully one-half the county is yet covered with magnificent oak forests. Poplar and hickory are plentiful.

Considerable lumber has been cut, principally in the northern portion. The forests in the southern part of the county are very extensive and fine.

The numerous rivers are excellent courses for shipping logs.

#### FUEL.

Coal costs from \$1.00 to \$1.25 per ton and wood about 50 cents per cord.

#### COST OF LAND.

Good farm land costs from \$10.00 to \$20.00 per acre, and timber land from \$5.00 to \$10.00 per acre.

#### FARM LABOR.

The supply is generally sufficient. Wages average about \$12.00 per month, including board.

#### PRINCIPAL CROP.

Corn and tobacco. The yield of corn is on the average 30 bushels to the acre and it sold last year for 40 cents. The yield of tobacco is from 900 to 1,000 pounds to the acre and the selling price last year averaged \$5.00 per hundred.

Hay, wheat, oats, apples, pears and peaches are among the principal crops. Garden truck and other products grow well.

Cattle and hogs are raised extensively.

Tobacco and cattle are the chief products exported.

The chief sources of wealth are lumbering and agriculture.

#### SOCIAL ADVANTAGES.

The county is not thickly settled especially in the southern portion.

Practically all the inhabitants are Americans, only a few negroes, Irish and Germans. As a rule they are a prosperous agricultural people.

There are 91 free schools, 35 churches and numerous social organizations.

#### GENERAL ADVANTAGES.

A dry, healthful climate; fertile soil; natural grasses grow well, Agriculture and stock raising are profitable.

Extensive forests of fine timber with good logging facilities.  
A wealth of undeveloped mineral resources.

Roads in good condition. Inhabitants energetic and intelligent.

One of the many naturally rich undeveloped counties of the State.

### HAMLIN.

The county seat, has a population of about 300. Is situated in the northern portion of the county about 18 miles from the railroad, and 36 miles from Huntington, one of the largest cities in the State. It is in the midst of a prosperous agricultural community.

### FACTS AND FIGURES.

Lincoln county has 410,672 acres of land assessed 1896 at \$1,-010,281; town lots assessed at \$10,042; buildings at \$113,673; personal property at \$269,589; total assessed value, all personal property and of real estate, \$1,403,586.

Personal property consists in part of:

2,343 horses and mules assessed at	\$86,114.
4,821 cattle	58,903.
3,171 sheep	3,177.
1,683 hogs	4,922.

91 public schools, with 3,830 pupils enrolled, employed 93 teachers in 1896.

Value of school houses and school property, \$18,009.

35 churches, all denominations, have a membership of 1,849.

Value of church property, \$12,200.

1,565 farms of 161,489 acres are valued at \$870,780.

4,537 acres of land produced 1890, 32,878 bushels of wheat.

17,222	"	"	"	"	"	338,141	"	"	corn.
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3,302	"	"	"	"	"	37,526	"	"	oats.
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### LOGAN COUNTY.

Is situated in the southwestern part of the State.

The Guyandotte river flows through the centre from the south to the north, which is navigable for pushboats.

## SOIL.

Black sandy and gravelly loam, some clay; is very fertile, especially in the valleys. Some sections are mountainous or hilly; there is considerable high, rolling land.

An excellent quality of fire clay and potters clay is found in abundance.

There is a plentiful supply of good sandstone for building purposes, and considerable deposits of roofing slate.

Iron ore exists in different sections, but the extent of the deposits has not been determined.

## WATER.

The Guyandotte river and its tributaries give an abundant supply to every section.

Drinking water is plentiful and of a good quality.

## ROADS.

Are not in as good condition as could be desired. They are kept up by the enforced services of male citizens.

## COAL.

There is not a portion of the county that is not well supplied.

Every family may, and most of them do, have their own coal banks.

All varieties of bituminous coal are found.

The veins are thick and lie so as to be easily worked.

Coal mining will play an important part in the development of the county. At present the amount mined is confined to the local consumption.

## TIMBER.

More than one-half of the area is covered with untouched timber.

There are magnificent forests of oak, poplar, ash, lynn, maple, beech, birch, pine, hickory and other varieties. Vast tracts are still in their primitive grandeur.

The Guyandotte and its tributaries furnishes a ready means for floating out logs. The lumbering operations are now quite extensive and are increasing, they are at present the greatest source of wealth.

### FUEL.

There is very little coal and practically no wood sold for fuel. The supply is so abundant that there is no local market, each family producing all they require.

### COST OF LAND.

The best farming land costs \$25 per acre; good land can be bought for \$5 or \$10 per acre, and timber land for about the same price or even less.

### FARM LABOR.

There is an abundant supply. Wages are 50 cents per day, with board.

### PRINCIPAL CROP.

Corn; the yield is on the average 26 bushels to the acre. It sold last year for 30 cents a bushel on the average, but part of the time it was much higher.

The bottom lands are suited to all crops and are well tilled.

Cereals, vegetables and fruits are cultivated and do well.

The hilly sections are excellent grazing districts and cattle and sheep are among the principal products.

### SOCIAL ADVANTAGES.

The Guyandotte valley is comparatively well settled, but the greater portion of the county has never been developed to any extent.

There are 40 free schools so situated as to be within easy reach of almost every section.

Churches of various denominations are scattered through the county.

Fully 95 per cent. of the inhabitants are Americans, and as a rule they are prosperous and contented.

### GENERAL ADVANTAGES.

There is a wealth of timber, coal and other minerals almost entirely untouched.

The climate is healthful, a bracing mountain air. There is an abundance of water. The soil is fertile, a large portion being well adapted to cultivation.

There are good grazing districts.



Lumber, stock raising and agriculture are the principal sources of wealth.

With the construction of a railroad mining will be one of the principal pursuits.

## LOGAN,

The county seat, is situated on the Guyandotte river, about the centre of the county. It has a population of 500 and is a place of considerable importance in the lumbering industry. It is 10 miles from the Norfolk and Western railroad and 65 miles from Charleston.

## FACTS AND FIGURES.

Logan county has 250,252 acres of land assessed 1896 at \$622,430; town lots assessed at \$22,738; buildings at \$82,486; personal property at \$182,019; total assessed value, all personal property and of real estate, \$909,673.

Personal property consists in part of:

1,225 horses and mules assessed at	\$44,305.
3,158 cattle	" " 29,209.
1,499 sheep	" " 1,500.
1,496 hogs	" " 3,008.

40 public schools, with 2,235 pupils enrolled, employed 45 teachers in 1896.

Value of school houses and school property, \$18,875.

24 churches, all denominations, have a membership of 594.

Value of church property, \$6,000.

1,449 farms of 328,949 acres are valued at \$2,233,800.

313 acres of land produced 1890,	1,822 bushels of wheat.
16,502 " " " " " "	286,873 " " corn.
2,561 " " " " " "	22,132 " " oats.

## MARION COUNTY.

Area, 314 square miles. Population, 20,721.

Situated in the northern part of the State.

The Tygarts Valley and the West Fork rivers enter the county from the southeast and the southwest respectively. They unite near the centre and form the Monongahela, which flows to the northeast.

The Baltimore and Ohio railroad runs through the entire county from the southeast to the northwest, a branch road extending through the northeastern section. The Monongahela River railroad enters the county from the southwest and extends to the county seat.

### SOIL.

Consists principally of limestone, clay and sandy loam, is rich, deep and productive. The surface is high and rolling; no mountains and but few steep hills.

Building stone, both lime and sand, is abundant. Glass sand of a fine quality has been discovered and is used in the glass factories of the county. The fire clays have been worked for years; furnace brick, sewer pipe, etc., are manufactured.

Some of the best natural gas and oil wells in the State are located here. They are both utilized extensively.

### WATER.

The Monongahela, West Fork and Tygarts Valley rivers and their tributaries.

Drinking water is pure and abundant.

### ROADS.

In fair condition; kept up by a road tax.

### COAL.

The splendid Pittsburg vein of coking coal underlies the county throughout the entire area. The splendid shipping facilities and the easy access to markets make this coal region assume great importance.

Fourteen commercial mines operated. Production, year ending June 30, 1897, reported by the State Mine Inspector, 1,368,682 tons.

### TIMBER.

Perhaps one-third of the area is covered with good forest. Oak, poplar, chestnut, maple and hickory are the most abundant. The commercial timber has been largely cut. Lumbering is still carried on to some extent, there being several saw mills in the county.

## FUEL.

Coal costs about 60 cents at the mine and \$1.50 per ton delivered  
Wood prepared for the stove costs \$3.00 per cord.

## COST OF LAND.

Good farm land costs from \$20.00 to \$40.00 per acre, and timber land, which is rather scarce, in the neighborhood of \$50.00 per acre.

## FARM LABOR.

In some sections here is a demand for good laborers, though the supply is generally sufficient. Wages range from \$12.00 to \$15.00 per month, including board.

## PRINCIPAL CROP.

Wheat and corn. The average yield of wheat is 14 bushels and corn 35 bushels to the acre. Wheat sold for 80 cents and corn 40 cents a bushel last year.

All crops, including vegetables and fruits, thrive.

The limestone soil is especially good for grazing. Blue grass grows in all parts of the county. Cattle and dairy products are extensive.

The mining operations make a good local market for agricultural products.

Shipping facilities to the eastern markets are excellent.

## SOCIAL ADVANTAGES.

Portions of the county have been settled a number of years and the social advantages have steadily increased.

From 80 to 90 per cent. of the inhabitants are Americans, prosperous and educated. There are 144 free schools; a high school several graded schools and the State Normal School, also 94 church edifices.

## GENERAL ADVANTAGES.

Soil is rich and productive; climate healthful; mineral and other natural resources inexhaustible.

Local markets are good. Within easy reach of the best markets of the county. Excellent transportation facilities.

While the greater portion is devoted to agriculture, the mining

and manufacturing industries control large capital and give employment to thousands.

It is comparatively a well developed county and one that is growing rapidly.

There is much valuable territory remaining to be settled.

### FAIRMONT

Is the principal city and the county seat. It has a population of about 3,000 and is situated on the Monongahela river at the junction of the Baltimore and Ohio and the Monongahela River railroads. It is the banking and business centre of an extensive coal and coking region. The manufacturing interests are quite extensive. It is one of the most prosperous of the small cities of the State. A State Normal School is located here.

### FACTS AND FIGURES.

Marion county has 236,769 acres of land assessed 1896 at \$2,944,-928; town lots assessed at \$290,164; buildings at \$1,380,854; personal property at \$2,979,916; total assessed value, all personal property and of real estate, \$7,595,862.

Personal property consists in part of:

6,896 horses and mules assessed at	\$194,857.
8,774 cattle	" " 138,655.
10,557 sheep	" " 16,169.
2,151 hogs	" " 8,893.

71 manufacturing establishments, with \$600,668 invested capital, pay 373 employees \$128,840 yearly.

144 public schools, with 6,667 pupils enrolled, employed 186 teachers in 1896.

Value of school houses and school property, \$137,842.

94 churches, all denominations, have a membership of 5,035.

Value of church property, \$96,995.

2,111 farms of 180,291 acres are valued at \$5,454,290.

9,224 acres of land produced 1890, 94,202 bushels of wheat.

10,662	"	"	"	"	"	312,947	"	"	corn.
4,089	"	"	"	"	"	76,278	"	"	oats.

## MARSHALL COUNTY.

Area, 248 square miles. Population, 20,735.

The most southern of the four counties of the northern panhandle.

Bordered on the west its entire length by the Ohio river, which affords the cheapest transportation and whose valleys are always fertile.

Two railroads, the Ohio River railroad, following the line of the Ohio river and connecting with all railroads running east and west through the State; and the Baltimore and Ohio, running parallel about half the length of the county.

### SOIL.

Rolling in character, principally rich loam, well adapted to market gardening and convenient to city markets.

One of the best agricultural counties in the State.

A large proportion of the county is creek or river bottom land and very productive.

Building stone of excellent quality, limestone in abundance, furnace sand for foundry and rolling mill purposes, and clays of several kinds are found.

Natural gas and oil have been discovered, but not found in profitable quantity.

### WATER.

Ohio river on the west. Fish creek and Grave creek in the interior of the county.

Drinking water, abundant and wholesome.

### ROADS.

In good condition; graded and kept up under the alternate law of 1891.

Road tax, 50 cents on \$100.00 valuation.

### COAL.

Marshall has no surface coal, but the entire county is underlain with two veins of the Pittsburg coal.

Good fuel coal, and mined cheaply.

Five mines operated. Production, year ending June 30, 1897, reported by State Mine Inspector, 162,396 tons.

## TIMBER.

Perhaps one-fourth of the county is yet covered with good timber. A great deal has been taken out.

What is left is principally oak, some very fine poplar, particularly in the southeastern part.

## FUEL.

Wood, \$1.50 to \$2.00 per cord; coal, home mined, good quality \$1.50 to \$2.00 per ton.

## COST OF LAND.

Good farm land sells for \$25.00 to \$35.00 per acre. Timber land from \$20.00 to \$25.00 per acre.

## FARM LABOR.

Sufficient for demand. Good hands receive from \$15.00 to \$20.00 per month, with board.

## PRINCIPAL CROP.

Corn; raised in about five months. Average yield, 35 to 65 bushels per acre; sold past year for 25 cents per bushel.

Wheat and oats, fruit and vegetables raised in abundance; cattle, hogs and sheep are raised.

Grass grows luxuriously and makes the county a suitable one for stock-raising.

Good shipping facilities. Agriculture is the principal source of wealth of the county.

## SOCIAL ADVANTAGES.

Population, 20,735; the inhabitants as a rule refined, educated and prosperous; 95 per cent. Americans; some German; 58 churches of various denominations; 111 county schools and a number of fraternal organizations throughout the county.

A desirable location to all seeking a comfortable home.

## GENERAL ADVANTAGES.

A healthy climate; water pure and wholesome; productive soil; profitable for agriculture and stock raising.

Rare facilities for transportation by rail or water; wealth of

natural resources; streams well bridged and roads well graded and an energetic, intelligent people.

Principal towns in the county are Benwood, Cameron and Moundsville, the county seat.

### BENWOOD.

Is a manufacturing suburb of Wheeling.

Large iron and steel works and factories are located in the town, which is connected with Wheeling and Moundsville by electric railway.

Paved streets; electric lights; population, 2,934.

### MOUNDSVILLE.

Is a prosperous, growing town, with paved streets, electric lights and other evidences of enterprise.

River distance to Pittsburg, 109 miles; to Cincinnati, 371 miles; shortest distance by rail to Wheeling, 12 miles, to Pittsburg, 82 miles, to Parkersburg, 83 miles.

The State penitentiary is located in Moundsville.

Population, 1890, 2,688, an increase of 51.52 per cent. in ten years.

### FACTS AND FIGURES.

Marshall county has 190,331 acres of land, assessed 1896 at \$2,-907,715; town lots assessed at \$524,945; buildings at \$1,464,689; personal property at \$1,325,850; total assessed value, all personal property and of real estate, \$6,223,200.

Personal property consists in part of:

5,935 horses and mules assessed at	\$94,710.
6,348 cattle	" " 84,470.
22,365 sheep	" " 18,390.
1,373 hogs	" " 8,330.

61 manufacturing establishments with \$3,474,518 invested capital, pay 1,947 employees \$962,649 yearly.

111 public schools, with 4,834 pupils enrolled, employed 131 teachers in 1896.

Value of school houses and school property, \$98,956.

58 churches, all denominations, have a membership of 5,495.

Value of church property, \$105,350.

1,612 farms of 180,252 acres are valued at \$6,855,180.

14,877 acres of land produced 1890, 202,486 bushels of wheat.

17,102 " " " " " 518,758 " " corn.

9,953 " " " " " 258,309 " " oats.

## MASON COUNTY.

Area, 440 square miles. Population, 20,721.

Situated in the western part of the State.

Borders on the Ohio river for 56 miles. The Great Kanawha river passes through the centre from the southeast to the northwest.

The Ohio River railroad skirts the Ohio river and the Kanawha and Michigan railroad the Great Kanawha river through the entire county.

## SOIL.

About one-fourth of the county is river bottom land. Heavy, rich loam, clay and sandy loam predominate.

Some parts are high, rough and hilly; the greater portion is rolling or bottom land.

A handsome grey building and paving sandstone is abundant. An excellent quality of fire clay is found on the Ohio river. Salt deposits exist and salt has been manufactured for many years.

Oil has been discovered in the northern part of the county.

## WATER.

The Ohio and Great Kanawha rivers and their tributaries. Drinking water is plentiful.

## COAL.

The Pittsburg seam underlies the northern part. Coal has not been discovered south of the Kanawha river.

The quality is excellent and the mining operations are extensive.

Seven commercial mines operated. Production, year ending June 30, 1897, reported by the State Mine Inspector, 111,535 tons.

## TIMBER.

The commercial timber easy of access has been generally cut. Considerable remains in the interior; probably one-fourth of the area is covered with good forests.

Oak and poplar are the principal woods; some fine walnut has been preserved.

Lumbering is still carried on to some extent. The numerous rivers and streams furnish a ready means of transporting the logs.



There are several saw and stave mills, also a furniture factory in operation.

#### FUEL.

Coal costs from \$1.00 to \$1.50 per ton at the bank or mine. Wood costs about \$1.00 a cord.

#### COST OF LAND.

Good farm land can be bought for \$10.00 to \$40.00 per acre, and timber land from \$20.00 to \$25.00 conveniently located.

#### FARM LABOR.

The supply is generally abundant, though in some sections at some seasons it is not sufficient. Wages range from \$13.00 to \$18.00 per month, including board.

#### PRINCIPAL CROPS.

Wheat and corn. The yield of wheat is from 8 to 20 bushels and of corn from 20 to 60 bushels per acre. Wheat sold last year from 50 cents to 85 cents and corn 20 cents to 25 cents per bushel.

Some of the finest farming land of the State is in this county. The cultivated sections give an unusually large yield for all crops.

Blue grass is indigenous, and the grazing ranges are extensive and exceptionally fine.

Hay is one of the leading products and cattle are raised in large numbers. The dairy products have assumed large proportions.

Vegetables and garden truck receive special attention in the river farms.

The facilities for shipping produce by water, the cheapest method known, are excellent.

#### SOCIAL ADVANTAGES.

The inhabitants are largely American. There are some Germans, English and Irish. The educational advantages are good, there being 145 free schools and 94 churches, well distributed through the county.

#### GENERAL ADVANTAGES.

Mild, healthful climate, rich soil, a good system of education and abundant natural resources.

The shipping facilities by both rail and water are as good as could be desired.

Unusually good advantages for cattle and stock raising.

The proximity of undeveloped regions invite settlement.

Agriculture, especially grazing, is the principal source of wealth.

The county is well supplied with towns. Point Pleasant, the county seat, has a population of 2,000. Is situated on the Ohio river at the junction of the Kanawha and Michigan and the Ohio River railroads. It is 43 miles from Huntington and 172 miles from Wheeling. It is an important shipping point for the products of the county.

### FACTS AND FIGURES.

Mason county has 268,186 acres of land, assessed 1896 at \$3,015,-761; buildings assessed at \$817,771; personal property at \$1,056,-405; total assessed value, all personal property and of real estate, \$5,205,769.

Personal property consists in part of:

5,251 horses and mules assessed at	\$136,025.
7,422 cattle	" " 78,480.
7,638 sheep	" " 7,295.
837 hogs	" " 3,950.

30 manufacturing establishments, with \$620,355 invested capital, pay 339 employees \$121,530 yearly.

145 public schools, with 6,478 pupils enrolled, employed 172 teachers in 1896.

Value of school houses and school property, \$87,972.

94 churches, all denominations, have a membership of 5,412.

Value of church property, \$90,390.

1,953 farms of 250,326 acres are valued at \$4,741,170.

14,176 acres of land, produced 1890, 152,461 bushles of wheat.

21,631	"	"	"	"	"	558,382	"	"	corn.
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3,906	"	"	"	"	"	65,128	"	"	oats.
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### MERCER COUNTY.

Area, 420 square miles. Population, 16,002.

One of the southern counties. Borders on Virginia.

The New river touches the eastern extremity and the Bluestone river flows through the county from the southwest to the northeast.

The Norfolk and Western railroad runs along the entire south-

ern and southwestern border, several short branch roads extend to some distance into the interior.

Another railroad is projected that will enter the county from the northeast.

### SOIL.

Loam, sandy clay with slate bottom; considerable limestone. Most of it is fertile and well adapted to certain crops. Portions are mountainous, but the larger part is a high rolling plateau.

Iron ore of excellent quality exists in large quantities, but as yet has not been mined to any extent.

Limestone, suitable for building and agricultural purposes, is abundant. A good quality of sandstone and a fine grade of marble exists in large quantities.

There are extensive deposits of fire and potters clays that have been developed to a considerable extent, all kinds of pottery and fire brick being manufactured in the county. Oil has been discovered, though not developed.

### WATER.

The Bluestone and New rivers, Brush and Rich creeks and numerous smaller streams.

Springs are plentiful, and pure, wholesome drinking water abundant.

### ROADS.

In fair condition; kept up by a road tax of 50 cents on \$100 valuation and enforced work of male citizens.

### COAL.

The Flat Top coal field extends into this county. Coal of the finest quality is found in the western section.

Eight commercial mines operated. Production, year ending June 30, 1897, reported by the State Mine Inspector, 873,300 tons.

### TIMBER.

There is still considerable good timber; possibly one-half the original growth is standing.

While the woods are not as fine as those found elsewhere in the State, there is plenty of a very good quality. Hard woods, oak, hickory and poplar predominate.

## FUEL.

Coal costs on the average all over the county, about \$2.50 per ton, and cut wood \$1.00 per cord.

## COST OF LAND.

Good farm land costs from \$10.00 to \$20.00 per acre, and timber land from \$8.00 to \$15.00 per acre.

## FARM LABOR.

The supply is generally sufficient. During 1897 there was a scarcity in some sections. Wages range from 50 cents to 75 cents per day, including board.

## PRINCIPAL CROP.

Corn; the yield is from 25 to 30 bushels per acre; it sold last year for 50 to 65 cents per bushel.

Wheat, rye, buckwheat and other cereals, vegetables and fruits grow well in most sections. Tobacco is also an important crop. The larger portion of the county is peculiarly adapted to grazing. Limestone is in most of the land and grasses grow luxuriantly.

Cattle and tobacco are the principal farm products exported.

## SOCIAL ADVANTAGES.

About 85 per cent. of the inhabitants are Americans. There are a considerable number of foreigners, especially in the mining regions.

As a rule the people are well educated and prosperous. The county has 127 free schools, also an academy and State Normal School. There are 68 churches and numerous social and fraternal organizations.

## GENERAL ADVANTAGES.

High altitude, healthful, invigorating atmosphere. A wealth of natural resources but partially developed. Soil as a rule fertile. Railroad communication fair. Roads in fair condition.

The county offers inducements to settle and development that cannot be found elsewhere.

The principal towns are Bluefield and Princeton.

## BLUEFIELD.

Is on the Norfolk and Western railroad in the southern part of the county. It is a town of magic growth, being but a few years old and claiming a population of more than 5,000. It is the business centre of a rich coal and coking region.

## PRINCETON.

Is the county seat. It has a population of about 350 and is situated near the centre of the county at the foot of the Black Oak mountains on the Brush creek. It is the business town of an agricultural region.

## FACTS AND FIGURES.

Mercer county has 247,871 acres of land, assessed 1896 at \$1,-047,091; town lots assessed at \$235,118; buildings at \$667,620; personal property at \$666,386; total assessed value, all personal property and of real estate, \$2,610,215.

Personal property consists in part of:

2,954 horses and mules assessed at	\$88,975.
5,391 cattle	" " 51,187.
5,776 sheep	" " 5,756.
645 hogs	" " 1,776.

36 manufacturing establishments, with \$375,481 invested capital, pay 277 employees \$70,004 yearly.

127 public schools, with 4,752 pupils enrolled, employed 145 teachers in 1896.

Value of school houses and school property, \$78,803.

68 churches, all denominations, have a membership of 2,772.

Value of church property, \$48,600.

1,261 farms of 214,502 acres are valued at \$1,916,770.

5,910 acres of land produced 1890, 41,454 bushels of wheat.

9,605 " " " " " 166,104 " " corn.

4,790 " " " " " 61,767 " " oats.

## MINERAL COUNTY.

Area, 370 square miles. Population, 12,085.

Is in the northeastern part of the State. Borders on Maryland The Potomac river forms the western, northern and part of the

eastern boundary. The Baltimore and Ohio and the West Virginia Central and Pittsburg railroads follow the river closely for almost the entire distance.

The Cumberland and Pittsburg railroad touches the northwestern border, and the Chesapeake and Ohio canal skirts the northeastern boundary.

### SOIL.

Bottom lands are alluvial with sand; uplands are clay and limestone; ridge or mountain lands are freestone and slate. Bottom land is very fertile, rest is moderately so.

The surface alternate, mountains and broad valleys.

A portion of the county is limestone and a portion sandstone.

There is an abundance of building stone of both varieties. The limestone is pure and burns excellent lime; it is utilized largely for that purpose.

There is an abundance of excellent clay suitable for the manufacture of brick, fire brick and pottery ware.

Deposits of iron ore are extensive and of good quality.

### WATER.

The Potomac river, Patterson river, a branch of same, and numerous smaller streams.

The supply is well distributed, plentiful and of a good quality.

### ROADS.

In excellent condition; kept up partially by taxation and partially by enforced work of male citizens; there are some good pikes.

### COAL.

found in great abundance in the western portion.

The mining operations are quite extensive.

Five commercial mines operated. Production, year ending June 30, 1897, reported by the State Mine Inspector, 537,169 tons.

The varieties are bituminous and semi-bituminous, very valuable for steam and smithing purposes.

### TIMBER.

Large quantities of the most valuable has been marketed.

There are still large tracts of excellent timber land, principally

oak, poplar, chestnut, ash, and lynn. Hemlock is plentiful and there is considerable walnut.

The forests are one of the principal sources of wealth to the county.

### FUEL.

Coal costs \$1.20 per ton, and stove wood \$1.00 per cord.

### COST OF LAND.

Good farm land averages about \$20.00 per acre; in some sections it is considerably cheaper, going as low as \$3.00 per acre. The commercial timber land that remains is some distance from the railroad and will average \$9.00 per acre.

### FARM LABOR.

The supply is abundant. Wages are 50 cents per day, including board, and \$1.00 per day without board.

### PRINCIPAL CROP.

Corn, wheat and oats; the yield of corn is 30 bushels, wheat 15 bushels, and oats 25 bushels to the acre.

The broad valleys are excellent farming land and crops of all kinds are grown extensively.

Vegetables, fruit and poultry are among the important products.

A portion of the county is limestone and the blue grass sod is excellent; cattle raising is an important pursuit.

Shipping facilities are good and a considerable proportion of the products are sent out of the county.

### SOCIAL ADVANTAGES.

Portions of the county have been settled for many years. Educational and social advantages have been constantly improving. The inhabitants are now, as a rule, educated and prosperous. About 90 per cent. of them are Americans, there being some Germans and Italians.

The county has 71 free schools, some private institutions and 45 churches. It is well supplied with villages and towns of considerable importance.

### GENERAL ADVANTAGES.

High altitude and most desirable climate. Great diversity of soil; productive bottom land; good grazing upland.

Coal and other minerals abundant.

Rivers or creeks reach every section.

Is in close proximity to good markets.

Is almost encircled by railroads, shipping facilities are good.

Farm land is cheap.

Mining is the principal source of wealth of the western, and agriculture of the eastern part.

Keyser and Piedmont are the principal cities.

### KEYSER.

The county seat, has a population of over 2,000. It is an important railroad point, both the Baltimore and Ohio and the West Virginia Central and Pittsburg passing through it. The yards and shops of the former road are located there.

### PIEDMONT.

Another thriving town, with a population of over 2,000. It is located on the Potomac river, and has railroad shops and yards, large pulp and paper mills and industrial and commercial interests. It is also touched by both railroads.

### FACTS AND FIGURES.

Mineral county has 202,878 acres of land assessed 1896 at \$1,452,515; town lots assessed at \$280,235; buildings at \$903,010; personal property at \$976,090; total assessed value, all personal property and of real estate, \$3,611,850.

Personal property consists in part of:

2,012 horses and mules assessed at \$72,456.

3,974 cattle " " 62,897.

5,280 sheep " " 9,408.

234 hogs " " 1,306.

35 manufacturing establishments, with \$428,321 invested capital, pay 585 employees \$237,153 yearly.

71 public schools, with 3,055 pupils enrolled, employed 92 teachers in 1896.

Value of school houses and school property, \$65,636.

45 churches, all denominations, have a membership of 3,279.

Value of church property, \$68,225.

597 farms of 164,334 acres are valued at \$1,910,720.

3,449 acres of land produced 1890, 31,617 bushels of wheat.

4,460 " " " " 79,462 " " corn.

2,661 " " " " 42,012 " " oats.



## MINGO COUNTY.

Situated in the southwestern part of the State. Borders on Kentucky.

The Tug Fork of the Big Sandy river flows along the western boundary and is paralleled for almost the entire distance by the Norfolk and Western railroad. The railroad leaves the river in the northern portion and runs across the county, passing out to the northwest.

### SOIL.

Black, sandy loam predominates; is rich and strong. The surface is generally hilly or mountainous.

Iron ore exists, but the extent of the deposits has not been determined.

Good sand building stone and an excellent variety of fire clay appears to be abundant, but neither have been utilized to any extent.

Oil has been discovered in paying quantities, and natural gas abounds.

### WATER.

The Tug Fork of the Big Sandy river; the Guyandotte river; the Ben, Gilbert, Pigeon and numerous other creeks give an abundant supply for agricultural and lumbering purposes.

Good drinking water is plentiful.

### ROADS.

Not in very good condition. They are kept up by a road tax and enforced work of male citizens.

### COAL.

The county abounds with an excellent quality. The mining operations are extensive and increasing.

Ten commercial mines operated. Production, year ending June 30, 1897, reported by the State Mine Inspector, 267,789 tons.

### TIMBER.

Some of the best forests in the State are found here. While considerable lumber has been cut, there still remain extensive valuable tracts.

The poplar, oak, beech and hickory woods are of great commercial value. There is also some fine walnut wood.

As the county develops lumbering promises to be one of the leading industries for many years.

The numerous rivers and railroad offer good means of transportation.

### FUEL.

Coal ready mined costs about 75 cents per ton. Wood is so plentiful, and coal so cheap, that there is practically none sold for fuel.

### COST OF LAND.

Farm land costs from \$5.00 to \$20.00 per acre and timber land about the same.

### FARM LABOR.

There is sufficient for the present demands. Wages range from \$12.00 to \$15.00 per month, including board.

### PRINCIPAL CROP.

Corn; is harvested about five months from planting; average yield per acre is from 20 to 30 bushels; it sold last year for 50 cents a bushel.

A large part of the county is well adapted to cereals. Garden truck does well. Tobacco and apples, pears and plums are grown quite extensively.

Cattle raising is one of the principal industries.

While some produce is exported, the agricultural resources are not well developed and the thousands employed at mining give a good local market.

### SOCIAL ADVANTAGES.

The population has not been enumerated since the county was formed out of Logan county.

While portions are well settled, there is an extensive territory that is sparsely settled. From 75 to 80 per cent. of the inhabitants are Americans. There are a number of foreigners in the mining regions.

The county is well supplied with schools, churches, religious, social and fraternal organizations. The educational advantages are good. The people are progressive and as a rule prosperous.

## GENERAL ADVANTAGES.

A pure, invigorating mountain air. Much the larger portion is excellent farming and grazing land.

Coal and other natural products are abundant.

Large forests of virgin timber.

It is a rich undeveloped region.

Mining and lumbering are now the principal sources of wealth.

Williamson and Dingess are the principal towns.

## WILLIAMSON.

The county seat, is situated on the Norfolk and Western railroad on the western border. It is an active business place, being the centre of an extensive mining region.

## DINGESS.

Is the principal town in the northeastern part of the county. It is also situated on the Norfolk and Western railroad, and as the agricultural and lumbering interests develop, will be an important shipping point.

## FACTS AND FIGURES.

Mingo county has 300,100 acres of land assessed 1896 at \$847,604; town lots assessed at \$24,100; buildings at \$60,885; personal property at \$202,128; total assessed value, all personal property and of real estate, \$1,134,717.

Personal property consists in part of:

972 horses and mules assessed at \$38,416.

2,755 cattle " " 30,415.

1,679 sheep " " 1,749.

1,705 hogs " " 4,242.

Number of schools, 1896..... 59.

Number of teachers..... 60.

Number of pupils..... 1,891.

Value of school houses and school property, \$24,982.

## MONONGALIA COUNTY.

Area, 325 square miles. Population, 15,705.

Is in the northern part of the State. Borders on Pennsylvania.

The Monongahela and Cheat rivers flow through the eastern part. The Monongahela is navigable for a considerable distance in the county.

A branch of the Baltimore and Ohio railroad follows the Monongahela river through the entire county.

### SOIL.

A clay loam predominates. The surface is rolling and hilly, but not rugged. The soil is fertile; practically the entire district is good farming land.

Iron ore is found in paying quantities, principally in the eastern portion.

Oil and natural gas is abundant. There are enormous oil wells, the gas is utilized largely for lighting and heating purposes.

A beautiful and very durable variety of building sandstone, and also good building limestone is found in different sections.

Fire clays, suitable for the manufacture of brick and terra cotta ware, are abundant, especially in the eastern portion.

### WATER.

The Monongahela and Cheat rivers, Dunkard and Deckers creeks, and numerous smaller streams.

The supply is abundant and of good quality.

### ROADS.

In a fair condition; kept up by a road tax and enforced services of male citizens.

### COAL.

The veins are among the largest in the State; lie near the surface and are easily worked. The supply is practically unlimited. Two commercial mines operated. Production, year ending June 30, 1897, reported by the State Mine Inspector, 31,288 tons.

### TIMBER.

The most extensive forests are in the eastern portion.

A large part of the most desirable commercial timber has been marketed.

Possibly a third of the county is covered with the original forests; oaks and other hard woods being the principal varieties.

## FUEL.

Coal costs 75 cents per ton. Fire wood is so abundant that practically none is sold for local consumption.

## COST OF LAND.

Good farm land can be bought for \$20.00 per acre, but some of the finest goes as high as \$50.00 or \$60.00 per acre.

## FARM LABOR.

There is abundance. Wages are 75 cents per day, including board.

## PRINCIPAL CROP.

Corn; the yield is 40 bushels to the acre, and it sold last year for 40 cents per bushel.

Wheat, oats, potatoes, rye and buckwheat are among the staple crops.

Vegetables and fruits are cultivated very extensively. The poultry and dairy products are important.

Grass grows spontaneously; the soil is largely a blue grass one and well watered. The grazing districts are among the best and cattle, sheep, and hogs are among the most important products.

Agriculture is probably the principal source of wealth.

## SOCIAL ADVANTAGES.

The greater portion of the county is fairly well settled; towns and villages are within comparatively easy reach of each other.

The inhabitants as a rule are well educated and prosperous; 95 per cent. of them are Americans, some Irish and Germans, and a few French and Italians.

There are 11 free schools and 72 churches of various denominations.

## GENERAL ADVANTAGES.

Climate is mild, invigorating and healthful. Soil is productive, almost the entire county is good farming land. Grazing districts are extensive and most desirable.

Water supply is abundant and well distributed.

The mineral resources are diversified and practically unlimited.

The larger portion has been cleared and in a measure prepared

for farming, though there are still quite extensive forests of desirable commercial timber.

Good markets are within easy reach.

Shipping facilities are good.

Social and educational advantages are good.

### MORGANTOWN.

The county seat, is situated on the Baltimore and Ohio railroad, and on the Mononaghela river at the head of navigation. It has a population of more than 1,000. It is an important business centre and the seat of the West Virginia State University.

### FACTS AND FIGURES.

Monongalia county has 284,166 acres of land assessed 1896 at \$2,907,575; town lots assessed at \$171,617; buildings at \$916,147; personal property at \$2,082,561; total assessed value, all personal property and of real estate, \$6,027,900.

Personal property consists in part of:

5,637 horses and mules assessed at	\$148,806.
10,296 cattle	136,606.
16,012 sheep	17,554.
1,995 hogs	7,020.

70 manufacturing establishments with \$152,245 invested capital, pay 177 employees \$47,597 yearly.

118 public schools, with 4,192 pupils enrolled, employed 120 teachers in 1896.

Value of school houses and school property, \$65,709.

72 churches, all denominations, have a membership of 5,027.

Value of church property, \$88,100.

2,082 farms of 201,542 acres are valued at \$6,764,530.

8,559 acres of land produced 1890, 94,851 bushels of wheat.

12,107 " " " " " 338,881 " " corn.

5,514 " " " " " 102,211 " " oats.

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### MONROE COUNTY.

Area, 460 square miles. Population, 12,429.

Situated in the southern part of the State. Borders on Virginia.

The Greenbrier river touches the northern boundary and the New river the southwestern.

The Chesapeake and Ohio railroad runs for a short distance through the northern extremity, and the Norfolk and Western railroad passes within a few miles of the southwestern extremity.

### SOIL.

Lime and sandstone predominate, considerable sandy loam with clay bottom, as a rule fertile and productive.

The larger portion is high rolling table land, interspersed with mountains.

A fine grade of iron ore is found in great abundance, especially in the eastern part.

Limestone is prevalent throughout the entire county, and is used for roads and agricultural purposes. There are several quarries of fine black and gray marble, also considerable building sandstone.

### WATER.

Greenbrier river in the north; Indian creek, Pots creek, Hands creek, Rich creek and numerous other streams.

There are here a greater variety and abundance of medicinal mineral waters than in any other county of the State. There are numerous popular health resorts, of which the Salt Sulphur Springs, Red Sulphur Springs and the Old Sweet Springs have a wide reputation.

### ROADS.

In fair condition; in some sections they are excellent. Kept up by a road tax and enforced work of male citizens.

### TIMBER.

There is abundance of smaller growth; the supply of mercantile timber is limited. About one-tenth of the county is still covered with a good forest.

The woods consist principally of white oak, poplar, pine, ash and hickory. There is a great deal of tanbark and timber good for railroad ties and the smaller stock.

### FUEL.

Coal costs from \$2.25 to \$3.50 per ton and wood about \$1.00 per cord.

## COST OF LAND.

Good farm land costs from \$10.00 to \$15.00 per acre and timber land from \$5.00 to \$15.00 per acre.

## FARM LABOR.

Is plentiful; wages are 50 cents per day, including board.

## PRINCIPAL CROP.

Corn; average yield per acre 25 bushels, and it sold last year for 50 cents. The other leading cereals are wheat, buckwheat and rye.

Tobacco is grown extensively, as are also fruits, especially apples.

The blue grass sod takes exceptionally well on the limestone soil of this county, and cattle raising is one of the principal industries. Sheep thrive and are raised in large numbers.

All stock raising is profitable.

## SOCIAL ADVANTAGES.

Portions of the county have been settled for a number of years and the best social advantages have grown up. There are some sections comparatively undeveloped.

Fully 90 per cent. of the inhabitants are Americans; educated and prosperous. There are 122 free schools and 76 churches scattered through the county, also private educational institutions.

## GENERAL ADVANTAGES.

The climate is delightful and healthful, being much sought after as a health resort; pure and medicinal water plentiful; soil and climate especially adapted to cattle and sheep raising.

Agricultural products grow well in most sections. Social advantages are good. Farm and timber land unusually cheap. Good indications for future development.

## UNION.

Is the county seat and is situated near the centre of the county. It has a population of 350. It is 12 miles from the railroad and 137 from Charleston. It is in the heart of a beautiful country.

The county is well supplied with villages and towns.



## FACTS AND FIGURES.

Monroe county has 272,894 acres of land assessed 1896 at \$1,-618,421; town lots assessed at \$37,588; buildings at \$563,907; personal property at \$736,948; total assessed value, all personal property and of real estate, \$2,797,102.

Personal property consists in part of:

3,754 horses and mules assessed at	\$130,715
9,252 cattle	" " 189,111.
10,333 sheep	" " 18,124.
828 hogs	" " 3,924.

35 manufacturing establishments with \$104,102 invested capital, pay 122 employees \$25,789 yearly.

122 public schools, with 3,450 pupils enrolled, employed 123 teachers in 1896.

Value of school houses and school property, \$28,162.

76 churches, all denominations, have a membership of 5,109.

Value of church property, \$76,170.

1,521 farms of 245,946 acres are valued at \$3,736,220.

9,089 acres of land produced 1890, 109,019 bushels of wheat.

11,551 " " " " " 247,054 " " corn.

4,215 " " " " " 71,130 " " oats.

## MORGAN COUNTY.

Area, 230 square miles. Population, 6,744.

In the northeastern part of the State and extends from Maryland on the north to Virginia on the south.

The Potomac river, the Chesapeake and Ohio canal and the Baltimore and Ohio railroad running side by side, form the northern boundary. A branch of the railroad extends some miles into the interior.

The Great Cacapon river flows through the western section.

## SOIL.

Limestone and slate in the uplands; good sandy loam in the bottom lands. Principally rolling and high, portion mountainous.

The iron ore, which is plentiful, consists principally of brown hematite and is mined and shipped in considerable quantities.

The limestone is of the purest quality; the burning of lime is an industry of considerable importance.

Glass sand is abundant, and is one of the finest varieties; it is quarried and shipped extensively.

Good potters clay has been found in small quantities.

### WATER.

The Potomac and Cacapon rivers; Sleepy creek in the east and their many tributaries.

The purest drinking water and fine mineral water is abundant.

### ROADS.

In fair condition; kept up by a road tax and enforced work of male citizens.

### COAL.

Anthracite coal has been found and mined to some extent; the mining operations have now been abandoned.

### TIMBER.

There remains a large amount of good timber. The principal woods are white, red and chestnut oak, considerable poplar and some walnut.

A large amount of commercial wood has been cut. Ties, staves, hoop poles and tanbark are got out in large quantities.

### FUEL.

Coal costs \$3.50 per ton and wood ready cut about \$1.25 per cord.

### COST OF LAND.

Good farm land can be bought for \$10.00, \$15.00 and \$20.00 per acre, and timber land from \$5.00 to \$15.00 per acre.

### FARM LABOR.

There appears to be a scarcity in some sections, but as a rule the supply is sufficient. Wages are from \$10.00 to \$12.00 per month, including board.

### PRINCIPAL CROP.

Corn and wheat. Corn runs as high as 70 bushels to the acre, but averages considerably less; wheat, 25 bushels to the acre.

Corn sold for 65 cents per barrel, on the cob, and wheat 90 cents per bushel.

All cereals grow well and are raised extensively in most sections.

Vegetables and fruits are cultivated.

Some of the finest farms in the State are found in the bottom lands.

The limestone soil of the uplands produces an exceptionally fine blue grass; horses, cattle and sheep are raised and shipped in large numbers.

Agriculture is the chief source of wealth.

### SOCIAL ADVANTAGES.

The county is conveniently located on the main line of travel east and west. The inhabitants are largely a prosperous and intelligent people; about 95 per cent. are Americans, the remainder are principally Germans.

There are 42 free schools, a number of private institutions and 37 churches; also the usual number of social and fraternal organizations.

### GENERAL ADVANTAGES.

Climate and water recognized as being exceptional. The county is a popular health resort.

Most of the soil is fertile and well adapted to cultivation. The grazing districts are among the best in the State. Cattle, and especially sheep raising, is profitable and becoming more so.

Mineral resources are rich.

In close communication with the best markets of the country. Shipping facilities are good.

### BERKELEY SPRINGS.

Is the county seat and has a population of 800. It is situated on a branch of the Baltimore and Ohio railroad, 28 miles from Martinsburg and 128 from Baltimore. It is the centre of a prosperous and growing agricultural country. The famous Berkeley mineral springs are located here; the water is very valuable in cases of rheumatism and kindred diseases.

### FACTS AND FIGURES.

Morgan county has 146,724 acres of land assessed 1896 at \$454,435; town lots assessed at \$81,397; buildings at \$449,626; personal

property at \$422,724; total assessed value, all personal property and of real estate, \$1,408,182.

Personal property consists in part of:

1,621 horses and mules assessed at	\$59,380.
2,888 cattle	" " 27,710.
1,988 sheep	" " 3,765.
2,920 hogs	" " 7,443.

42 public schools, with 1,841 pupils enrolled, employed 51 teachers in 1896.

Value of school houses and school property, \$35,570.

37 churches, all denominations, have a membership of 1,499.

Value of church property, \$37,400.

593 farms of 100,651 acres are valued at \$786,930.

4,397 acres of land produced 1890, 40,942 bushels of wheat.

6,209 " " " " " 124,135 " " corn.

1,365 " " " " " 19,163 " " oats.

### McDOWELL COUNTY.

Area, 680 square miles. Population, 7,300.

The southernmost county in the State.

The Tug Fork of the Big Sandy river has its headwaters in the eastern and southern section, and flows across the county in a northwesterly direction.

The Norfolk and Western railroad passes through the entire northern section.

#### SOIL.

A dark, sandy loam predominates. The surface is generally mountainous; there is considerable high rolling and bottom land.

As a rule the soil is fertile.

There is a great abundance of good sandstone for building purposes; several varieties of fire clays and limestone.

The natural resources of the county have not been fully ascertained.

#### WATER.

The Tug Fork of the Big Sandy river and its multitude of tributaries, some of the principal ones of which are, Panther creek South Fork, Sand Fork, Big War, Tug Run and the Elkhorn.

## ROADS.

In fair condition; kept up principally by enforced labor of male citizens.

## COAL.

The deposits are among the richest and most extensive in the State. The county is in the midst of the Flat Top field. The mining and coking operations are very extensive.

Thirty commercial mines are operated. Production, year ending June 30, 1897, reported by the State Mine Inspector, 2,617,917 tons.

## TIMBER.

But a small portion has been cut. About two-thirds of the county is still in untouched forests.

Oaks of the finest quality and size are abundant, poplar and chestnut is found in large quantities.

Only limited quantities have been marketed. There are good facilities for getting out the logs, and lumbering promises to be an industry of great importance, it is now one of the principal sources of wealth.

There are several large lumber mills.

## FUEL.

Coal costs about \$1.00 per ton. The cost of fire wood is trivial, there being practically none sold for local use.

## COST OF LAND.

Good farm or timber land costs from \$10.00 to \$20.00 per acre.

## FARM LABOR.

Is plentiful; wages are from 50 cents to 75 cents per day, including board.

## PRINCIPAL CROP.

Corn; yield is about 20 bushels to the acre; sold last year for 50 cents per bushel.

Other cereals, vegetables, apples and peaches are cultivated quite extensively. Tobacco grows to perfection.

The natural grasses are excellent and grazing, especially sheep raising, is an important and profitable pursuit.

The shipping facilities are fair, but the local market consumes practically the entire surplus agricultural product.

### SOCIAL ADVANTAGES.

The county is only sparsely settled. It has been but recently opened to settlement by the building of a railroad. About 90 per cent. of the inhabitants are Americans. The foreign element is largely concentrated at the mines.

There are 86 free schools and a number of churches and religious organizations.

### GENERAL ADVANTAGES.

Healthful, invigorating climate; an abundant supply of pure water; a soil that, as it is cleared of timber, proves fertile and productive.

A natural grazing country in which cattle and sheep raising has proved profitable.

A wealth of coal lands and other mineral resources.

The timber is probably as good and more abundant than that of any other county in the State.

Shipping facilities are fair. The county has bright prospects for development.

Mining and lumbering are now the principal industries.

Welch, the county seat, is situated in the northern part, on the Norfolk and Western railroad. It is an important business centre for the extensive mines of the county.

There are numerous towns along the railroad and a number scattered through the interior.

### FACTS AND FIGURES.

McDowell county has 642,484 acres of land assessed 1896 at \$1,-622,012; town lots assessed at \$44,159; buildings at \$864,872; personal property at \$536,969; total assessed value, all personal property and of real estate, \$2,568,013.

Personal property consists in part of:

714 horses and mules assessed at \$25,744.	
1,396 cattle	13,168.
882 sheep	943.
307 hogs	650.

8 manufacturing establishments, with \$294,182 invested capital, pay 244 employees \$60,263 yearly.

86 public schools, with 2,150 pupils enrolled, employed 86 teachers in 1896.

Value of school houses and school property, \$20,085.

11 churches, all denominations, have a membership of 345.

Value of church property, \$4,890.

587 farms of 103,932 acres are valued at \$1,054,450.

112 acres of land produced 1890, 621 bushels of wheat.

5,257 " " " " " 80,576 " " corn.

1,704 " " " " " 14,185 " " oats.

## NICHOLAS COUNTY.

Area, 720 square miles. Population, 9,309.

Is a little south of the centre of the State.

The Gauley river passes through the centre from east to west.

A branch of the Chesapeake and Ohio railroad enters the western extremity of the county, and the West Virginia and Pittsburg railroad runs to within a few miles of the eastern boundary. The construction of another railroad is contemplated, which will enter the county from the south.

### SOIL.

Much of the county is an elevated rolling plateau. Is largely loam and yellow clay, fertile and productive. There are some mountains, but almost the entire region is good farming land.

A good quality of iron ore is found in abundance in some sections.

There is plenty of fine building sandstone throughout the county, also a good fire and potters clay. The clays have been utilized to some extent.

### WATER.

The Gauley and Meadow rivers and their tributaries. The county is well watered. Drinking water is pure and wholesome.

### ROADS.

There are a number of good turnpikes. The roads are generally in good condition.

### COAL.

Good beds of coal are found over the entire county. Some of

the deposits are exceptionally fine and among the most extensive in the State.

The mining operations have been confined to supplying the local demand. No commercial mines have been opened.

### TIMBER.

Some of the finest timber in the State is found here.

Fully three-fourths of the county is covered with magnificent forests. Oak and poplar predominate. There is some walnut, hemlock and other varieties.

Water courses are numerous and afford good facilities for floating logs. There are a few saw mills now in operation.

### FUEL.

Coal costs \$1.50 per ton. Fire wood is not sold, being so abundant.

### COST OF LAND.

Good farm land costs from \$8.00 to \$10.00 per acre and timber land from \$5.00 to \$10.00 per acre.

### FARM LABOR.

The supply is sufficient. Wages average about 65 cents a day, including board.

### PRINCIPAL CROP.

Corn; the yield averages about 20 bushels to the acre and it sold last year for 50 cents a bushel.

Hay is grown extensively, the yield is about  $1\frac{1}{2}$  tons to the acre; it sold for \$4.00 per ton.

Wheat, oats, buckwheat and rye, also vegetables and fruits, do well.

The grasses are especially fine. Cattle raising is the chief agricultural pursuit and large numbers are shipped to the eastern markets.

### SOCIAL ADVANTAGES.

A larger part of the county is not thickly settled.

About 98 per cent. of the inhabitants are Americans. As a rule they are well educated and almost invariably prosperous. There are 102 free schools and about 48 churches, also a number of social and fraternal organizations.



## GENERAL ADVANTAGES.

The county lies high, the atmosphere is pure and bracing. Good water is abundant. Soil is fertile and the larger part well adapted to cultivation. The conditions for cattle and sheep raising are exceptionally good.

A wealth of mineral resources awaiting development.

Extensive forests of the finest timber.

Large tracts of excellent land to be cleared and cultivated.

Agriculture and lumber are now the principal sources of wealth.

## SUMMERSVILLE.

The county seat has a population of 400. It is 30 miles from the railroad, and about 68 miles from Charleston, the capital of the State. A normal school is located here. The town is an important business and educational centre for the county.

## FACTS AND FIGURES.

Nicholas county has 453,711 acres of land assessed 1896 at \$1,-300,405; town lots assessed at \$2,183; buildings at \$111,990; personal property at \$342,930; total assessed value, all personal property and of real estate, \$1,757,508.

Personal property consists in part of:

2,833 horses and mules assessed at \$86,341.

6,966 cattle " " 74,365.

10,138 sheep " " 11,266.

1,649 hogs " " 3,007.

102 public schools, with 3,171 pupils enrolled, employed 102 teachers in 1896.

Value of school houses and school property, \$19,124.

48 churches, all denominations, have a membership of 2,378.

Value of church property, \$19,250.

1,459 farms of 187,112 acres are valued at \$1,449,550.

3,826 acres of land produced 1890, 21,257 bushels of wheat.

9,555 " " " " " 185,311 " " corn.

3,596 " " " " " 40,627 " " oats.

## OHIO COUNTY.

Area, 120 square miles. Population, 41,557.

Is situated in the northern part of the State; near the centre of the northern pan-handle.

The Ohio river forms the western boundary.

The Baltimore and Ohio railroad, the Pittsburg, Cincinnati, Chicago and St. Louis, the Ohio River and other railroads cross or enter the county, centering at Wheeling.

## SOIL.

A dark loam, with considerable limestone; rich and productive. Generally rolling in character; all good for agricultural purposes.

Both lime and sand building stone and brick clay, fire clay and potters clay are abundant; a good cement clay is also found.

Oil has been discovered but not in paying quantities.

## WATER.

The Ohio river on the west and numerous streams that flow through the interior.

Drinking water is pure and plentiful.

## ROADS.

In excellent condition. They run in every direction and are kept in perfect repair.

## COAL.

The Pittsburg seam of coal underlies the county, and is worked in a number of places.

Nine commercial mines operated. Production, year ending June 30, 1897, reported by the State Mine Inspector, 95,578 tons.

## TIMBER.

The proximity to a large city and the value of the soil for agricultural purposes has caused most of the timber to be cut.

## FUEL.

Wood costs from \$1.50 to \$2.00 per cord and coal from \$1.00 to \$1.25 per ton.

### COST OF LAND.

Good farm land costs from \$20.00 to \$60.00 per acre, according to location.

### FARM LABOR.

There is a sufficient supply. Wages are about \$15.00 per month, including board.

### PRINCIPAL CROP.

All crops grow well. Mixed farming is followed generally. Possibly corn is the principal cereal, the yield is 50 bushels to the acre; it sold last year for 30 to 35 cents per bushel.

Market gardens are very extensive in some sections.

Apples, pears, peaches, plums and cherries are grown profitably.

Blue grasses grow magnificently. The hay crop is large. In some parts of the county cattle raising is the principal pursuit.

The sheep are especially fine and yield a wool of a most excellent quality.

### SOCIAL ADVANTAGES.

Though the county is one of the smallest, it is the second in population and contains a large city.

The social advantages are all that could be expected or desired.

Possibly 80 per cent. of the inhabitants are Americans; Germans and Irish are the principal foreign elements in the rural districts.

There are 42 free schools, a State Normal School and a number of private institutions, also 44 churches and the usual number of social and fraternal organizations.

### GENERAL ADVANTAGES.

The healthful climate, rich productive soil, good local market, excellent roads, rich mineral products, the best of shipping facilities and exceptional social advantages combine to make it one of the most desirable localities in the State.

The fertile soil and proximity to market make it possible to reach perfection in truck farming. The sections not so close to the city are especially fine for general farming and grazing.

Manufacturing industries are very extensive. Establishments engaged in almost every branch of industry may be found here. Opportunities for great diversity of employment are furnished.

## WHEELING.

The largest city in the State, is situated in the western part, on the Ohio river. The population in 1890 was 34,522 and is now probably 40,000. It has numerous and populous suburbs that really form a part of the city and increase the population to fully 75,000. It is an important railroad centre, numerous roads converging here. The manufacturing industries are extensive and varied. It is a city of great and growing commercial importance. With its paved streets, rapid transit street car service, electric light and power plants, water works, sewerage, magnificent buildings and churches, numerous free and private schools and institutions of learning, newspapers, literary and social circles, Wheeling is in many respects a completed city, but one that is rapidly growing in every direction.

## FACTS AND FIGURES.

Ohio county has 64,742 acres of land assessed 1896 at \$1,711,380; town lots assessed at \$3,832,110; buildings at \$10,312,750; personal property at \$5,140,570; total assessed value, all personal property and of real estate, \$20,996,810.

Personal property consists in part of:

2,838 horses and mules assessed at	\$119,675.
2,619 cattle	" " 43,635.
10,090 sheep	" " 10,090.
272 hogs	" " 665.

439 manufacturing establishments, with \$8,571,857 invested capital, pay 6,899 employees \$3,055,692 yearly.

42 public schools, with 1,929 pupils enrolled, employed 55 teachers in 1896.

Value of school houses and school property, \$44,456.

44 churches, all denominations, have a membership of 15,035.

Value of church property, \$657,000.

577 farms of 59,365 acres are valued at \$4,469,740.

3,798 acres of land produced 1890, 60,326 bushels of wheat.

5,322 " " " " " 153,275 " " corn.

3,862 " " " " " 121,420 " " oats.

## PENDLETON COUNTY.

Area, 650 square miles. Population, 8,711.

Lies in the eastern part of the State; borders on Virginia.

## SOIL.

An alluvial formation predominates in the lowlands and clay and sand in the uplands. The surface is generally mountainous with considerable valley land. The soil is fertile.

There is an abundance of excellent iron ore well distributed throughout the county.

Manganese is found in considerable quantities.

Good limestone and sandstone is plentiful.

There are large deposits of pure white glass sand and excellent varieties of fire and potters clays.

## WATER.

The South Branch of the Potomac river and the North and South Forks of the South Branch, all rise in the southern portion and flow northward, almost parallel, through the entire county.

The supply is abundant and of the best quality.

## ROADS.

In fair condition; kept up by a road tax and enforced work of male citizens.

## COAL.

A small quantity has been found in the northwestern part. It has not been mined or the exact extent of the deposit determined.

## TIMBER.

Well supplied with the very best quality. Probably four-fifths of the county is still covered with a fine growth.

Oak, hickory, maple and chestnut are the principal woods.

The supply of excellent tanbark is practically inexhaustible.

While the rivers are not navigable they furnish means for drifting logs to market.

## FUEL.

Coal costs \$3.00 a ton and cut wood about \$1.50 per cord.

### COST OF LAND.

Good farm land costs \$25.00 per acre, some of the best going as high as \$50.00. Timber tracts, which make good agricultural land when cleared, cost from \$5.00 to \$10.00 per acre and even less.

### FARM LABOR.

The supply is generally sufficient. Wages are about \$12.00 per month, including board.

### PRINCIPAL CROP.

Corn; average yield, 25 bushels to the acre. Wheat, rye, oats and buckwheat are raised in considerable quantities.

The climate and soil are especially adapted to the cultivation of fruits, and that branch of agriculture is making rapid progress. Apples, peaches, pears and plums do well.

Grasses take well in all parts of the county, and grow naturally as the forests are cleared.

Cattle and sheep raising is now the leading industry, and has every prospect of rapid development as the county is settled.

### SOCIAL ADVANTAGES.

Portions are very thinly settled. In the settled sections the people are well educated and prosperous. Americans form 98 per cent. of the population; there are some Germans and Irish. The county has 87 free schools, some private institutions and 21 churches.

### GENERAL ADVANTAGES.

High altitude; pure, invigorating mountain air; soil generally fertile; excellent conditions for cattle raising. Sheep especially are profitable.

A wealth of excellent timber.

Rich deposits of iron ore and other minerals.

Inhabitants are industrious, economical and prosperous.

### FRANKLIN.

The county seat. has a population of 325. It is in the midst of a beautiful country. The nearest railroad point, at present, is Harrisonburg, Va., which is about 40 miles.

## FACTS AND FIGURES.

Pendleton county has 226,387 acres of land assessed 1896 at \$456,079; personal property at \$432,350; total assessed value, all personal property and of real estate, \$966,699.

Personal property consists in part of:

3,323 horses and mules assessed at	\$71,583.
8,177 cattle	“ “ 103,309.
15,217 sheep	“ “ 24,508.
1,518 hogs	“ “ 3,217.

87 public schools, with 2,395 pupils enrolled, employed 86 teachers in 1896.

Value of school houses and school property, \$13,444.

21 churches, all denominations, have a membership of 1,288.

Value of church property, \$15,950.

1,075 farms of 340,639 acres are valued at \$2,317,310.

6,101 acres of land produced 1890, 63,998 bushels of wheat.

7,334	“	“	“	“	“	144,425	“	“	corn.
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1,961	“	“	“	“	“	28,196	“	“	oats.
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## PLEASANTS COUNTY.

Area, 150 square miles. Population, 7,539.

Is in the northwestern part of the State.

The Ohio river forms the northern and western boundary, the Ohio River railroad running along the bank for the entire distance.

## SOIL.

River bottom land, which is plentiful, is principally clay and sandy loam with light clay subsoil; limestone predominates in the uplands.

The surface is generally rolling; somewhat hilly in the southeastern section.

There is a plentiful supply of limestone and also an excellent variety of hard blue sandstone, good for building purposes.

Large deposits of good fire and potters clays are found in different localities.

An abundant supply of natural gas is found in the southeastern section and is largely used for lighting and manufacturing purposes.

Oil has been discovered, and evidently exists in large quantities, extensive wells are now being worked.

### WATER.

The Ohio river, Middle Island creek, Sugar creek, McKim creek, French creek and other streams.

Drinking water is wholesome and plentiful.

### ROADS.

In fair condition; kept up by a road tax of 20 cents on \$100 valuation, and enforced work of male citizens.

### COAL.

A good variety is found all over the county, though the veins are not generally thick enough to justify commercial mining.

The mines or banks operated have been confined to partially supplying the local market.

### TIMBER.

A large portion is still covered with good forests, some of which have been culled, but considerable commercial timber remains. Oak is the principal variety, some poplar, ash and walnut. Staves, railroad ties, oak lumber and some ship timber are the principal forest products.

### FUEL.

Coal costs from \$1.50 to \$1.75 per ton, and wood about \$1.50 per cord.

### COST OF LAND.

River bottom land costs from \$50.00 to \$100.00 per acre, and the upper lands from \$5.00 to \$40.00 per acre. Timber land costs from \$10.00 to \$20.00 per acre.

### FARM LABOR.

The supply is generally sufficient. Wages average \$13.00 per month, including board.

### PRINCIPAL CROP.

Corn: the yield averages about 35 bushels to the acre, though in



some sections it goes as high as 90 bushels. It sold last year for 40 cents a bushel.

Wheat, oats, rye, hay and potatoes are among the most important products.

Fruits grow well and are cultivated profitably, especially apples.

The blue grass sod is exceptionally fine and the uplands are an excellent grazing country. Cattle raising is probably the principal agricultural pursuit; large numbers are shipped to the eastern markets.

Agriculture and natural gas and oil are the principal sources of wealth.

#### SOCIAL ADVANTAGES.

The inhabitants are as a rule well educated, and in comfortable circumstances; very little absolute want. About 90 per cent. are Americans.

There are 51 free schools and about 18 churches, also fraternal and social organizations.

#### GENERAL ADVANTAGES.

Mild, healthful climate; fertile soil, some of the best farming land in the State; excellent grazing districts and good supply of water.

Deposits of natural gas and oil which is being largely utilized. The oil works are very extensive.

Good prospects for commercial coal mining.

Good shipping facilities by both land and water.

#### ST. MARY'S.

The county seat, has a population of 520. It is situated on the Ohio river and the Ohio River railroad. It is an active business place and is growing rapidly.

#### FACTS AND FIGURES.

Pleasants county has 84,137 acres of land assessed 1896 at \$633,831; town lots assessed at \$22,087; buildings at \$179,886; personal property at \$508,942; total assessed value, all personal property and of real estate, \$1,344,746.

Personal property consists in part of:

965 horses and mules assessed at	\$71,032.
2,494 cattle	“ “ 36,832.
3,760 sheep	“ “ 5,180.
212 hogs	“ “ 1,362.

51 public schools, with 2,060 pupils enrolled, employed 54 teachers in 1896.

Value of school houses and school property, \$20,153.

18 churches, all denominations, have a membership of 784.

Value of church property, \$9,450.

780 farms of 72,200 acres are valued at \$1,481,260.

3,234 acres of land produced 1890, 31,188 bushels of wheat.

6,147	"	"	"	"	"	154,257	"	"	corn.
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769	"	"	"	"	"	12,636	"	"	oats.
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## POCAHONTAS COUNTY.

Area, 765 square miles. Population, 6,814.

Is in the eastern part of the State. Borders on Virginia.

The Greenbrier river runs through the centre from north to south.

### SOIL.

Generally of limestone formation, and fertile. The surface, as a rule, is high and mountainous. There is considerable high rolling table land. The best farming land is in the central and western portion.

A great abundance of good iron ore is found in the eastern section.

There are large deposits of blue, gray and fossil limestone, also a fine gray sandstone good for building purposes. Limestone for burning is abundant.

Good quarries of a fine black and white marble have been located near the southern border.

### WATER.

The Greenbrier river and its tributaries.

The entire county is underlaid with a wonderful supply of water, pure, fresh and ice cold all the year. From the earth and mountain sides flow large springs, some of them having sufficient volume to run grain mills, a number of mills are operated in this way.

The Williams river is in the western part.

## ROADS.

Are in good condition. Each male citizen under 50 years of age is required to work or furnish a substitute for work 4 days each year.

## COAL.

The New River seam of coking coal underlies the western portion. It is an excellent coking coal and with the development of the county will be a source of great wealth.

The mining operations at present are very limited.

## TIMBER.

One-half to two-thirds of the county is still covered with the original forests. No greater variety or finer timber grows elsewhere in the State.

The oak, pine, poplar and chestnut woods are exceptionally fine.

In some sections lumbering is now carried on very extensively and is likely to continue and increase for many years.

The Greenbrier and its tributaries furnish good water courses for floating out logs.

## FUEL.

Coal costs on the average over the entire county \$6.00 a ton and cut wood about \$1.00 a cord.

## COST OF LAND.

Good farm land costs from \$10.00 to \$40.00 per acre, some going as high as \$60.00. Timber land costs from \$3.00 to \$10.00 per acre.

## FARM LABOR.

The supply is sufficient. Wages range from \$10.00 to \$15.00 per month, including board.

## PRINCIPAL CROP.

Wheat, corn and hay are about equal in importance.

A large portion of the county is good farming land; buckwheat, oats, rye and vegetables do well. Fruits are cultivated quite extensively; some sections are especially adapted to tobacco.

Cattle, horses, sheep and hog raising is now the most important agricultural pursuit.

Blue grass, timothy and clover grow to perfection. The stock are among the finest and are much sought after in the markets. Splendid blooded horses are raised.

The products, with the exception of the live stock, are largely consumed in the local market.

Cattle are exported in large numbers.

### SOCIAL ADVANTAGES.

Fully 95 per cent. of the inhabitants are Americans; there are some English, Germans, Irish and a few Jews.

While there are a number of good sized towns and villages, there are extensive tracts not settled and practically a wilderness.

There are 79 free schools and 84 churches. As a rule the people are educated, and, with a very few exceptions, prosperous.

### GENERAL ADVANTAGES.

High altitude, healthful, invigorating atmosphere; a fertile soil. Soil and climate well adapted to stock raising.

Good natural resources and extensive forests of the finest woods.

A wonderful supply of the purest and most healthful water. Excellent roads. Beautiful scenery.

With the introduction of a railroad, the region will be in many respects one of the most desirable.

### MARLINTON.

The county seat, is situated at about the centre of the county on the Greenbrier river. It is 45 miles, over an excellent road, to the Chesapeake and Ohio railroad. The West Virginia and Pittsburg railroad is somewhat closer, though not so easily reached.

### FACTS AND FIGURES.

Pocahontas county has 662,529 acres of land assessed 1896 at \$1,-953,416; town lots assessed at \$4,064; buildings at \$180,205; personal property at \$329,327; total assessed value, all personal property and of real estate, \$2,467,063.

Personal property consists in part of:

2,457 horses and mules assessed at	\$71,242.
5,710 cattle	" " 74,139.
13,744 sheep	" " 19,195.
538 hogs	" " 1,514.

79 public schools, with 1,951 pupils enrolled, employed 80 teachers in 1896. Value of school houses and school property, \$19,843.

34 churches, all denominations, have a membership of 1,614.

Value of church property, \$27,075.

908 farms of 319,145 acres are valued at \$2,456,340.

3,330 acres of land produced 1890, 37,936 bushels of wheat.

4,513 " " " " " 102,597 " " corn.

3,160 " " " " " 58,118 " " oats.

## PRESTON COUNTY.

Area, 709 square miles. Population, 20,355.

Is in the northern part of the State. Pennsylvania forms the northern boundary and Maryland the eastern.

The Cheat river divides the county into almost equal parts, flowing from the south to the northwest.

The main line of the Baltimore and Ohio railroad passes through the county near the centre, from east to west, and the West Virginia and Northern railroad connects the same with the county seat.

## SOIL.

Loam with clay subsoil; considerable limestone, some sand and gravel in the uplands.

High and rolling in character, some portions are mountainous.

With but comparatively small tracts the entire county is good agricultural land either for cultivation or grazing.

Limestone of a fine quality for the manufacture of lime, hydraulic cement for building purposes is abundant.

Pure, white, glass sand, and good fire and potters clays are found in large quantities.

Iron ore in paying quantities is found in every part of the county.

Natural gas and oil have been discovered, but they have not been utilized; or the extent of the deposits ascertained.

## WATER.

The Cheat river, Big and Little Sandy creeks, Muddy creek and other smaller streams.

Springs are numerous; drinking water is pure and abundant.

## ROADS.

In good condition; kept up by taxation and enforced services of male citizens.

## COAL.

Good gas, steam and coking coal is found all over the county.

Four commercial mines operated. Production, year ending June 30, 1897, reported by the State Mine Inspector, 120,211 tons.

## TIMBER.

A large amount has been cut. Probably three-fifths of the county is still covered with an excellent timber.

Oak predominates, and is of a superior quality. There are large tracts of hemlock and poplar, also spruce, chestnut, hickory and other hard woods.

## FUEL.

Coal costs from \$1.00 to \$1.75 per ton delivered; cut wood costs from 50 cents to \$1.00 per cord.

## COST OF LAND.

Good farm land costs from \$10.00 to \$40.00 per acre, the average being about \$20.00.

## FARM LABOR.

As a rule the supply is sufficient. More could be used in some sections. Wages average about \$12.00 per month, with board.

## PRINCIPAL CROP.

Corn and wheat. The yield of corn is about 25 bushels and of wheat 13 bushels to the acre. Wheat sold for 85 cents and corn 45 cents per bushel last year.

Buckwheat, oats, hay and fruits are among the principal products. The apple orchards are exceptionally fine.

It is largely a grazing country and cattle, sheep, hogs and dairy products are very extensive.

The shipping facilities are good.

Large quantities of buckwheat flour, potatoes, apples, poultry, wool, sheep, cattle and hogs are sent out of the county annually, principally to the eastern markets.

Agriculture and lumber are the principal sources of wealth.

## SOCIAL ADVANTAGES.

The inhabitants are prosperous and as a rule well educated.

About 90 per cent. are Americans; some Irish, Germans and Welsh.

There are 161 free schools and 124 churches, and a large number of social and fraternal organizations.

## GENERAL ADVANTAGES.

Climate is delightful, cool in summer by reason of the altitude.

Pure water, and an abundance of water power for industrial purposes.

Rich in iron ore, coal and other mineral deposits. Extensive, valuable timber land.

A fertile, productive soil. One of the best grazing regions in the State.

Natural fertilizer, lime, abundant.

Good roads and shipping facilities.

The county is well supplied with towns and villages.

Kingwood and Terra Alta are the principal towns.

## KINGWOOD.

The county seat, has a population of 800. It is situated near the centre of the county at the terminus of the West Virginia Northern railroad and is a prosperous, growing city.

## TERRA ALTA.

Is an important shipping and business town in the eastern part of the county. It has a population of about 500. Is situated on the Baltimore and Ohio railroad and has every indication of rapid development.

## FACTS AND FIGURES.

Preston county has 411,496 acres of land assessed 1896 at \$1,-601,516; town lots assessed at \$72,255; buildings at \$663,100; personal property at \$976,721; total assessed value, all personal property and of real estate, \$3,313,592.

Personal property consists in part of:

5,558 horses and mules assessed at	\$168,175.
9,394 cattle	122,631.
12,622 sheep	18,504.
868 hogs	4,563.

89 manufacturing establishments with \$570,445 invested capital, pay 528 employees \$122,729 yearly.

161 public schools, with 5,417 pupils enrolled, employed 183 teachers in 1896.

Value of school houses and school property, \$58,073.

124 churches, all denominations, have a membership of 7,136.

Value of church property, \$96,425.

2,513 farms of 313,343 acres are valued at \$4,198,590.

4,691 acres of land produced 1890, 42,673 bushels of wheat.

8,654 " " " " " 200,549 " " corn.

11,393 " " " " " 212,479 " " oats.

## PUTNAM COUNTY.

Area, 350 square miles. Population, 14,342.

Is situated in the western part of the State. The Great Kanawha river passes through the centre, from the southeast to the northwest.

The Kanawha and Michigan railroad follows the Kanawha river closely, through the entire county. The Chesapeake and Ohio railroad enters the county from the southeast and passes out near the centre of the western border.

## SOIL.

Sandy loam in the bottoms, gray loam on the hills; considerable clay; fertile and productive.

The surface is principally hilly, broad bottom lands, much rolling land back from the rivers.

Good limestone is found in some sections. Building sandstone is abundant.

There are large deposits of fire clay and good potter's clays.

Oil has been discovered, but not as yet in paying quantities.

## WATER.

The Great Kanawha and Pocataligo rivers. The Buffalo and Hurricane creeks and numerous other streams.

Drinking water is plentiful and pure.



## ROADS.

In fair condition; kept up principally by a road tax.

## COAL.

The Pittsburg vein of coal underlies the entire county. Has been mined for many years along the banks of the Kanawha river. It is a hard splint variety unexcelled for shipping, gas, steam and fuel.

Three commercial mines operated. Production, year ending June 30, 1897, reported by the State Mine Inspector, 131,522 tons.

## TIMBER.

The greater part of the commercial timber has been cut; probably one-eighth of the area is covered with good forest.

The wood lands from which staves and small timber is cut, are very extensive.

The usual varieties of woods are found; tanbark is abundant.

## FUEL.

Coal costs from 50 cents to \$1.00 per ton at the bank or mine, and wood from 75 cents to \$1.50 per cord.

## COST OF LAND.

Good farm land costs from \$10.00 to \$50.00 per acre, the average price being about \$25.00. Timber land averages about \$10.00 per acre.

## FARM LABOR.

The supply is abundant. Wages range from \$10.00 to \$15.00 per month, including board.

## PRINCIPAL CROP.

Corn; the average yield per acre is 30 bushels; in some sections it goes as high as 75 bushels. It sold last year for 30 to 50 cents per bushel.

Wheat and hay are probably the next most important crops. All cereals grow well; vegetables and fruits, especially apples, are cultivated extensively.

The poultry and dairy products are large.

Practically the entire county is good agricultural land. Some

sections are peculiarly adapted to grazing. The raising of cattle and hogs is an important and increasing industry.

The shipping facilities are good. The surplus agricultural products are sold largely in the Cincinnati, Pittsburg, and Charleston markets.

### SOCIAL ADVANTAGES.

About 90 per cent. of the inhabitants are Americans. Germans and Irish are the predominating foreign element.

The thrifty are prosperous. The educational advantages are good, there being 127 free schools and a number of private institutions. There are 47 churches and numerous associations.

### GENERAL ADVANTAGES.

The climate is healthful; soil fertile and well adapted to all crops; the river bottom land is abundant.

There is a bountiful supply of good and a reasonable supply of mercantile timber.

Coal is plentiful; large tracts yet undeveloped.

Grazing districts are fine and very extensive.

The water supply is abundant. Educational facilities are good.

Roads are in fair condition and the shipping facilities all that could be expected.

Agriculture and mining are the principal sources of wealth.

Winfield and Buffalo are probably the most important of the numerous towns.

### WINFIELD.

The county seat, has a population of about 350. It is situated near the centre of the county on the Kanawha river and the Kanawha and Michigan railroad. It is 25 miles from Charleston.

### BUFFALO.

Is an important town in the northern section. It has a population of about 300 and direct railroad and water connection with the Ohio river and the western markets.

### FACTS AND FIGURES.

Putnam county has 227,083 acres of land assessed 1896 at \$1,-364,540; town lots assessed at \$25,062; buildings at \$289,364; personal property at \$360,515; total assessed value, all personal property and of real estate, \$2,089,491.

Personal property consists in part of:

2,893 horses and mules assessed at	\$71,620.
4,524 cattle	" " 48,405.
3,660 sheep	" " 3,205.
580 hogs	" " 2,465.

28 manufacturing establishments with \$88,316 invested capital, pay 128 employees \$31,701 yearly.

127 public schools, with 4,088 pupils enrolled, employed 127 teachers in 1896.

Value of school houses and school property, \$38,230.

47 churches, all denominations, have a membership of 2,401.

Value of church property, \$30,800.

1,297 farms of 150,163 acres are valued at \$2,046,190.

6,521 acres of land produced 1890, 61,448 bushels of wheat.

12,900 " " " " " 289,529 " " corn.

3,817 " " " " " 52,771 " " oats.

## RALEIGH COUNTY.

Area, 570 square miles. Population, 9,597.

Is in the south central part of the State. The Big Coal river rises in the northern part.

The Chesapeake and Ohio railroad skirts the southeastern border, a branch road entering the county and terminating at the county seat.

Clay and sandy loam predominates. It is largely a high plateau, rolling in character; sections are mountainous, small portion rugged and considerable marsh land at the headwaters of the Big Coal river.

Good building sandstone is abundant; considerable deposits of fire clay and some limestone.

The natural resources of the county have not been fully ascertained.

## WATER.

The headwaters of the Big Coal river in the northern and the New river and Piney and Glade creeks in the southern section.

Small streams are numerous; good water is abundant.

## ROADS.

In fair condition; kept up by enforced services of all male citizens over 21 and under 50 years of age.

## COAL.

The Flat Top coking coal is found all over the county. It is an excellent quality. The seams are thick and easily worked.

The mining operations are rather limited, there being only one commercial mine operated. Production, year ending June 30, 1897, reported by the State Mine Inspector, 68,701 tons.

## TIMBER.

This is one of the undeveloped counties and is largely covered with a magnificent growth of timber. As much as seven-eighths of the area is covered with the original forests.

Oak and poplar are the principal woods; there are large tracts of white pine and considerable walnut, hemlock and other varieties.

## FUEL.

Coal costs about \$1.00 per ton. Wood is practically not on the market as fuel, the supply being too abundant.

## COST OF LAND.

Farm land costs from \$4.00 to \$50.00 per acre, the average being about \$12.00. Good timber land costs from \$10.00 to \$25.00 per acre, the average being about \$15.00.

## FARM LABOR.

The supply is abundant. Wages are from \$10.00 to \$15.00 per month, including board.

## PRINCIPAL CROP.

Corn; the yield runs as high as 75 bushels to the acre, the average being about 40 bushels; it sold last year from 50 to 60 cents per bushel.

The cereals, vegetables and fruits are cultivated and do well. In some sections special attention is paid to raising buckwheat.

Tobacco grows well in most parts.

There is good grazing land and cattle, dairy products and poultry are important.

Comparatively a small part of the county is under cultivation. Most of the products are consumed in the local market.

### SOCIAL ADVANTAGES.

As a rule the inhabitants are fairly well educated and prosperous. About 95 per cent. are Americans. There are 124 free schools and 45 churches of various denominations.

The settled portion is rather limited, much of the county being in a primitive condition.

### GENERAL ADVANTAGES.

A pure, dry atmosphere; fertile soil; good grazing land, natural grasses sodding without sowing.

An abundant supply of coal, and large forests of excellent timber.

Roads in fair condition. Shipping facilities are for the southern portion are good.

Lumber and agriculture are the principal sources of wealth.

When developed, this will, in many respects, be one of the most desirable counties of the State.

### BERKELEY.

The county seat, is situated on a branch of the Chesapeake and Ohio railroad in the southern part of the county.

It has a population of about 200 and is in the midst of a beautiful country.

### FACTS AND FIGURES.

Raleigh county has 451,562 acres of land assessed 1896 at \$1,-436,291; town lots assessed at \$6,646; buildings at \$71,360; personal property at \$304,033; total assessed value, all personal property and of real estate, \$1,818,330.

Personal property consists in part of:

2,158 horses and mules assessed at	\$63,678.
4,685 cattle	" " 45,568.
5,165 sheep	" " 5,165.
665 hogs	" " 1,091.

124 public schools, with 3,110 pupils enrolled, employed 125 teachers in 1896.

Value of school houses and school property, \$24,693.

45 churches, all denominations, have a membership of 1,761.

Value of church property, \$10,300.

1,280 farms of 149,653 acres are valued at \$1,424,530.

4,088 acres of land produced 1890, 26,509 bushels of wheat.

9,107 " " " " " 161,264 " " corn.

4,981 " " " " " 61,258 " " oats.

## RANDOLPH COUNTY.

Area, 1,175 square miles. Population, 11,633.

Situated in the northeastern part of the State.

The headwaters of the Cheat river are in the central and eastern part and the Tygarts Valley river in the western.

A branch of the Baltimore and Ohio railroad touches the western border near the centre. The West Virginia Central and Pittsburgh railroad enters from the north and runs through the western section, it also enters the southwestern section.

The Dry Fork railroad passes almost entirely through the county from north to south near the eastern border.

## SOIL.

Alluvial in the valleys, considerable clay and limestone in the mountains. Valleys are exceedingly fertile and productive. The uplands are especially adapted to grazing. A large portion is mountainous. The best farming land is in the western section.

Limestone and good sand building stone is abundant. Considerable lime is burnt.

Fire clays are plentiful, but the extent and value of the deposits has not been determined.

## WATER.

The headwaters of the Cheat river consists of five large streams that flow in almost parallel lines, through the centre and eastern portion. The Tygarts Valley river and the Middle Fork are in the western portion.

Small streams and springs are numerous.

## ROADS.

In fair condition; are kept up by a road tax and enforced work of male citizens.

## COAL.

The western portion is full of good quality. It is the "Roaring Creek" vein and is equal to any coking coal in the State.

Three commercial mines operated and considerable coal is mined for local consumption.

## TIMBER.

Probably the largest area of timber in any one county in the State is found here. Half the county is still in the original forest.

While the lumbering operations have been extensive the amount taken out is scarcely missed.

Oak, maple, beech, ash, poplar, pine are the principal varieties that form the vast forests.

The timber will be a source of great wealth.

## FUEL.

Coal costs \$2.00 per ton, and wood cut for use \$1.25 a cord. Wood is so plentiful that it is rarely sold for fuel.

## COST OF LAND.

Good farm land costs from \$10.00 to \$20.00 per acre, some of the best going as high as \$50.00. Timber land costs from \$3.00 to \$10.00 per acre, some of the most desirable going higher.

## FARM LABOR.

There is an abundant supply. Wages are \$15.00 per month, including board.

## PRINCIPAL CROP.

Corn; the average yield is about 20 bushels to the acre for the entire county. It sold last year for 50 cents per bushel.

Hay is probably the second crop in importance, though oats, wheat, buckwheat, vegetables and fruits, principally apples, do well.

Cattle and sheep raising is the pursuit to which the greatest attention is paid, and they are the principal agricultural product shipped out of the county.

## SOCIAL ADVANTAGES.

The county is the largest in the State, and considering the entire area, there are only about 10 inhabitants to the square mile. There are vast tracts still in a primitive state.

Some sections have been settled for many years and the inhabitants are well educated and prosperous. About nine-tenths of them are Americans.

There are 126 free schools and 51 churches of various denominations.

## GENERAL ADVANTAGES.

The atmosphere and climate are most delightful.

While the surface is generally mountainous, valleys are numerous and many of them broad, containing some of the richest and most productive land in the State.

There is a vast supply of coal and other mineral deposits, also a wealth of timber.

Fair facilities for shipping products.

Agriculture and lumbering are the principal sources of wealth.

It is one of the undeveloped regions of the State that promises to be of great importance.

Beverly and Elkins are probably the two most important towns.

## BEVERLY.

The county seat, has a population of 400. It is at the terminal of the West Virginia Central and Pittsburg railroad, about 207 miles from Martinsburg and 307 from Baltimore.

## ELKINS.

Is in the western part of the county a little north of Beverly. It has a population of about 750.

## FACTS AND FIGURES.

Randolph county has 687,632 acres of land assessed 1896 at \$2,-042,750; town lots assessed at \$73,045; buildings at \$250,386; personal property at \$545,628; total assessed value, all personal property and of real estate, \$2,911,809.

Personal property consists in part of:

3,360 horses and mules assessed at	\$70,833.
6,417 cattle	“ “ 66,696.
11,191 sheep	“ “ 13,100.
742 hogs	“ “ 1,207.



51 manufacturing establishments with \$165,840 invested capital, pay 226 employees \$41,041.

126 public schools, with 3,907 pupils enrolled, employed 133 teachers in 1896.

Value of school houses and school property, \$59,882.

126 churches, all denominations, have a membership of 2,824.

Value of church property, \$21,000.

1,358 farms of 450,181 acres are valued at \$4,282,990.

2,666 acres of land produced 1890, 23,278 bushels of wheat.

6,663 " " " " " 122,304 " " corn.

3,128 " " " " " 49,790 " " oats.

## RITCHIE COUNTY.

Area, 512 square miles. Population, 16,621.

Is in the northwestern section of the State.

The Baltimore and Ohio railroad runs through the county from east to west, and the Pennsboro and Harrisville and the Cairo and Kanawha Valley, narrow gauge roads, extend from the same into different sections.

### SOIL.

Dark loam in the bottom lands, red clay and sandy loam in the uplands; is very rich and well suited to all agricultural pursuits.

The surface is rolling with gently sloping hills.

Oil and natural gas are abundant. both are utilized extensively.

Oil wells have been in operation many years.

There is a good variety of fire clay and fine marble.

Building sandstone of a good quality is plentiful.

### WATER.

Both the North and South Fork of the Hughes river; smaller streams are numerous and extend in all directions.

The district is well watered; drinking water is wholesome.

### ROADS.

Are in fairly good condition; kept up by a road tax.

## COAL.

Surface coal is found in nearly every part of the county, but the veins are hardly heavy enough to justify commercial mining.

Under the surface there are extensive deposits of valuable coal. Considerable has been mined for local consumption.

## TIMBER.

The original forests are still extensive in the southeastern portion.

Probably two-thirds of the commercial timber has been marketed.

The remaining woods are composed largely of oak, there is some walnut and considerable ash, chestnut, maple, birch and beech.

Woodland fit for agricultural purposes is plentiful and well distributed.

## FUEL.

Coal costs 75 cents per ton and wood about 40 cents per cord.

## COST OF LAND.

Good farm land costs from \$10.00 to \$25.00 per acre, some of the very best going as high as \$50.00. Timber land costs from \$10.00 to \$20.00 per acre, some of it going as low as \$4.00.

## FARM LABOR.

In some sections the supply is not as abundant as desired, but as a rule it meets the demand. Wages are 50 cents per day, including board.

## PRINCIPAL CROP.

Corn; the yield ranges from 20 to 50 bushels to the acre. It sold last year for 40 cents a bushel.

Other cereals, vegetables and fruits do well. The poultry and dairy products are important.

Grass grows luxuriantly and much attention is given to stock raising. The pasturage is unsurpassed and lasts the greater part of the year. Cattle, horses, sheep and hogs are raised.

Shipping facilities are good. The surplus products are marketed largely in Baltimore, Philadelphia and New York.

Agriculture, especially stock raising, is the principal source of wealth.

## SOCIAL ADVANTAGES.

The greater portion is fairly well settled; villages and towns are numerous; railroads are convenient, and other means of communication are good.

From 90 to 95 per cent. of the inhabitants are Americans; as a rule they are well educated and prosperous.

There are 138 free schools and 75 churches of various denominations.

## GENERAL ADVANTAGES.

The soil is fertile and well watered. It lies well for agriculture and grazing. Climate is healthful.

Is within easy reach of good markets.

Shipping facilities are good; roads in a fair condition.

There is a healthy business activity and the prosperity of the county is assured.

## HARRISVILLE.

The county seat, is at the terminus of Pennsboro and Harrisville Ritchie County railroad, nine miles from the main line of the Baltimore and Ohio railroad. It is a place of considerable business activity and is the centre of a rich agricultural region.

## FACTS AND FIGURES.

Ritchie county has 293,434 acres of land assessed 1896 at \$1,-718,089; town lots assessed at \$25,980; buildings at \$341,576; personal property at \$757,089; total assessed value, all personal property and of real estate, \$2,842,746.

Personal property consists in part of:

4,442 horses and mules assessed at \$121,652.

7,443 cattle " " 90,733.

12,391 sheep " " 19,122.

662 hogs " " 1,563.

60 manufacturing establishments with \$267,732 invested capital, pay 226 employees \$67,325 yearly.

138 public schools, with 4,956 pupils enrolled, employed 150 teachers in 1896.

Value of school houses and school property, \$68,308.

75 churches, all denominations, have a membership of 4,282.

Value of church property, 53,825.

2,007 farms of 230,935 acres are valued at \$3,498,140.

8,412	acres of land produced 1890,	27,024	bushels of	wheat.
12,686	" " " " "	313,105	" " "	corn.
2,009	" " " " "	31,893	" " "	oats.

## ROANE COUNTY.

Area, 470 square miles. Population, 15,303.

Is in the west central portion of the State.

The Clendennin and Spencer railroad enters the county from the south and a branch of the Ohio River railroad from the north. The two roads terminate within about 12 miles of each other.

### SOIL.

Dark loam and clay predominates; it is fertile and productive. The entire county is good farming land.

The surface is rolling, with valleys and gently sloping hills.

There is considerable iron ore, but the extent of the deposits has not been determined. Limestone is also found and a beautiful variety of gray sandstone, very valuable for building purposes.

Natural gas has been discovered and is utilized for lighting and other purposes. Oil has also been found, a number of wells drilled and others now in course of construction.

### WATER.

There is no large river in the county, but it is well supplied with small streams.

The headwaters of the Pocataligo river are in the southern and Spring creek in the northern part. Some streams are large enough to float logs and are used for that purpose.

The supply is abundant for agricultural and drinking purposes.

### COAL.

The Pittsburg coking coal is found all over the county. Some of the veins are thick and lie in favorable position for mining.

The shipping facilities are fair, but the mining operations have thus far been confined to supplying the local market.

## TIMBER.

The wood is very fine and commands first class prices.

About half the county is still covered with valuable forests. Practically no timber has been removed from the southern section.

The principal varieties are oak, poplar, ash, chestnut, sycamore, maple, walnut, beech, pine and hickory.

There are vast quantities of tanbark.

## FUEL.

Coal costs from \$2.00 to \$2.50 a ton and cut wood about \$1.00 a cord.

## COST OF LAND.

Good farm land costs from \$15.00 to \$20.00 per acre, and timber land about \$10.00 per acre.

## FARM LABOR.

There is an abundant supply. Wages are \$13.00 a month, with board.

## PRINCIPAL CROP.

Corn; the yield averages about 30 bushels to the acre; in some sections it goes as high as 75 or 80 bushels. Last year it sold for 40 and 50 cents per bushel.

Wheat probably ranks second among the crops of the county, but oats, tobacco, hay, vegetables and fruits are cultivated extensively.

A large portion of the area is a natural grazing country and cattle, sheep and hogs are raised and shipped in large numbers.

The dairy and poultry products are also important.

Agriculture is the principal source of wealth.

## SOCIAL ADVANTAGES.

About 98 per cent. of the inhabitants are American; there are a few Irish, Germans and Welsh. The majority are educated and, as a rule, prosperous.

There are 135 free schools and 68 churches.

The social advantages compare favorably with those in the other counties.

## GENERAL ADVANTAGES.

A healthful climate and productive soil; there is no waste land; the entire area can be utilized for tillage or grazing.

One of the best grazing districts in the State.

The wealth of natural resources has been but partially developed. There are vast tracts of finest mercantile timber to be marketed. Shipping facilities are fair.

## SPENCER.

The county seat, has a population of 431. It is situated in the northern part of the county 33 miles from the Ohio river. One of the State Asylums for the Insane is located here.

## FACTS AND FIGURES.

Roane county has 297,426 acres of land assessed 1896 at \$1,118,-131; town lots assessed at \$41,952; buildings at \$256,235; personal property at \$449,540; total assessed value, all personal property and of real estate, \$1,865,798.

Personal property consists in part of:

4,313 horses and mules assessed at \$134,362.

8,039 cattle " " 94,741.

11,472 sheep " " 13,003.

859 hogs " " 3,220.

135 public schools, with 4,760 pupils enrolled, employed 138 teachers in 1896.

Value of school houses and school property, \$43,806.

68 churches, all denominations, have a membership of 4,178.

Value of church property, \$39,820.

2,128 farms of 263,291 acres are valued at \$2,757,270.

11,016 acres of land produced 1890, 87,430 bushels of wheat,

18,440 " " " " " 390,959 " " corn,

2,431 " " " " " 34,376 " " oats,

## SUMMERS COUNTY.

Area, 400 square miles. Population, 13,117.

Is in the southern part of the State.

The Greenbrier and the New rivers enter the county from the

northeast and the southwest respectively, and join near the centre of the western border, forming the Great Kanawha river.

The Chesapeake and Ohio railroad passes through the centre from east to west.

### SOIL.

Clay and sandy loam. A portion is rocky and mountainous; a large part is well suited to farming; most of it is good grazing land.

Iron ore exists in paying quantities, but the value of the deposits has not been determined.

There is a quantity of fire clay and potters clay of an excellent variety.

A beautiful variety of brown building sandstone is abundant, especially in the northern part; it is quarried and shipped in large quantities. There are also extensive ledges of white and gray sandstone.

Oil has been discovered but the extent of the deposits not determined.

### WATER.

The Greenbrier, New and Big Blue Stone rivers and their numerous tributaries.

There is an abundant supply of pure drinking water, and numerous valuable mineral springs, of which the Pence's Spring has acquired considerable reputation.

### ROADS.

Are in a fair condition; kept up by a road tax.

### COAL.

There is a good workable quality, but the quantity appears to be limited.

No commercial mines are in operation.

### TIMBER.

A large amount has been marketed.

About one-third of the county is still covered with the original forest.

There are extensive tracts of valuable timber yet to be cut. The principal varieties are oak, poplar, ash and hard woods.

## FUEL.

Coal costs \$3.50 per ton, and cut wood from 50 cents to \$1.00 a cord.

## COST OF LAND.

Good farm land costs from \$10.00 to \$30.00 per acre, and timber land from \$10.00 to \$15.00 per acre.

## FARM LABOR.

There is an abundant supply. Wages are 50 cents a day, with board.

## PRINCIPAL CROP.

Corn; the yield is about 30 bushels to the acre. It sold last year for 50 cents a bushel. There is probably as much wheat as corn raised.

Oats, buckwheat and tobacco are among the staple crops. All vegetables do well, and some sections have proved to be especially adapted to fruits.

It is largely a grazing country and the cattle industry is important.

Wheat, cattle, hogs, tobacco and lumber are the chief products exported.

## SOCIAL ADVANTAGES.

The county is well supplied with towns and villages, though some extensive tracts are but thinly settled. About 95 per cent. of the inhabitants are Americans; as a rule they are educated and prosperous.

There are 126 free schools, a high school and 42 churches of various denominations.

## GENERAL ADVANTAGES.

Healthful climate. The soil, as a rule, is fertile, some portions very rich and productive.

There is an abundant supply of minerals. Forests are still extensive and valuable. Mineral and pure drinking water is abundant.

Roads are in a fair condition and transportation facilities are good.

Agriculture and lumbering are the principal sources of wealth.



## HINTON.

The county seat, is situated near the western border on the Chesapeake and Ohio railroad. It has a population of 2,570 and is a place of considerable business importance.

## FACTS AND FIGURES.

Summers county has 214,267 acres of land assessed 1896 at \$523,489; town lots assessed at \$113,880; buildings at \$536,531; personal property at \$406,235; total assessed value, all personal property and of real estate, \$1,580,135.

Personal property consists in part of:

2,090 horses and mules assessed at \$74,905.

4,448 cattle " " 53,525.

4,188 sheep " " 4,970.

418 hogs " " 1,770.

35 manufacturing establishments, with \$103,689 invested capital pay 181 employees \$40,164 yearly.

126 public schools, with 3,734 pupils enrolled, employed 142 teachers in 1896.

Value of school houses and school property, \$32,594.

42 churches, all denominations, have a membership of 2,344.

Value of church property, \$28,775.

1,288 farms of 183,454 acres are valued at \$1,471,310.

4,157 acres of land produced 1890, 40,113 bushels of wheat.

8,562 " " " " " 176,212 " " corn.

3,469 " " " " " 49,365 " " oats.

## TAYLOR COUNTY.

Area, 177 square miles. Population, 12,147.

Is in the northeastern section of the State.

The Tygart's Valley river flows through the centre from the southeast to the northwest.

From Grafton, a point near the centre, the Baltimore and Ohio railroad extends in four directions, reaching all four sections of the county.

## SOIL.

Black loam largely; in some sections sandy and considerable clay; naturally very fertile.

Surface is generally rolling, with gently sloping hills.

Iron ore is abundant and has been utilized to some extent. There are also limited deposits of manganese.

Natural gas has been discovered.

Large beds of the finest varieties of fire clay are found in different parts of the county.

Limestone is plentiful and a good variety of sand building stone.

## WATER.

The Tygart's Valley river and its numerous tributaries give an abundant supply.

Drinking water is abundant and of a good quality.

## ROADS.

Are in a fair condition, and improving; kept up by a road tax and enforced services of male citizens.

## COAL.

Is abundant throughout the entire county. The Pittsburg coking coal and other veins are very extensive.

Five commercial mines operated. Production, year ending June 30, 1897, reported by the State Mine Inspector, 178,397 tons.

## TIMBER.

Most of the valuable wood has been cut. Possibly one-fifth of the area is still covered with good forests. There is considerable oak, poplar, hickory, chestnut and some walnut.

## FUEL.

Coal costs about 45 cents a ton at the mines and wood \$1.25 per cord.

## COST OF LAND.

Good farm land cost from \$18.00 to \$25.00 per acre, and wood land from \$10.00 to \$20.00 per acre.

Commercial timber land is more expensive.

## FARM LABOR.

The supply is generally sufficient. Wages range from 50 to 75 cents per day with board.

## PRINCIPAL CROP.

Corn is the principal cereal, the yield is about 30 bushels to the acre.

Wheat, oats and buckwheat are grown quite extensively.

Vegetables and fruits also do well.

Cattle, sheep, poultry, eggs and butter are the principal agricultural products. These are shipped in large quantities, principally to the Baltimore, New York and Philadelphia markets.

The western and northern portion of the county is an exceptionally fine grazing country.

The shipping facilities are excellent.

## SOCIAL ADVANTAGES.

The inhabitants are fairly well educated and the majority are prosperous.

It was among the earlier settled counties and is well supplied with towns and villages.

90 per cent. of the inhabitants are Americans; there are some Irish and Germans and a few Italians.

There are 64 free schools and 48 churches of various denominations. The West Virginia Reform School is located in this county, also the West Virginia College, a large private institution.

## GENERAL ADVANTAGES.

Healthful climate, good water supply and fertile soil.

Grazing districts are exceptionally fine. Cattle raising is profitable.

Mineral resources are good, coal especially is abundant.

Facilities for transporting surplus products to market are excellent.

Cattle raising and mining are the principal sources of wealth.

## GRAFTON.

The county seat, is a city of 3,159 inhabitants. It is situated near the centre of the county, has direct railroad connection with

the eastern and western markets, and also with the northern and southern sections of the State.

It is an important railroad centre and shipping point, also of considerable commercial importance.

### FACTS AND FIGURES.

Taylor county has 114,412 acres of land assessed 1896 at \$1,897,-364; town lots assessed at \$265,385; buildings at \$982,700; personal property at \$1,018,500; total assessed value, all personal property and of real estate, \$3,664,949.

Personal property consists in part of:

2,551 horses and mules assessed at	\$68,575.
4,638 cattle	" " 80,585.
6,123 sheep	" " 11,730.
789 hogs	" " 3,635.

46 manufacturing establishments with \$359,781 invested capital, pay 542 employees \$204,542 yearly.

64 public schools, with 2,856 pupils enrolled, employed 85 teachers in 1896.

Value of school houses and school property, \$61,597.

48 churches, all denominations, have a membership of 4,402.

Value of church property, \$105,960.

1,032 farms of 105,805 acres are valued at \$2,592,900.

3,791 acres of land produced 1890, 39,241 bushels of wheat.

4,604 " " " " " 116,859 " " corn.

2,064 " " " " " 35,959 " " oats.

### TUCKER COUNTY.

Area, 500 square miles. Population, 6,459.

Is in the northeastern part of the State, the northern boundary touching Maryland.

The West Virginia Central and Pittsburg railroad passes through the county from the northeast to the southwest; the Dry Fork railroad connects with the same and extends into the southeastern section.

### SOIL.

Dark loam and red clay, considerable sandy loam in the bottom

land; as a rule fertile and productive. The surface is generally mountainous, great deal of high table land.

Lime and sandstone of a good quality for building is found in abundance. The limestone is also utilized to some extent in the furnaces, and for the manufacture of lime.

There is a good variety of fire clay found in different sections.

### WATER.

The Cheat river and its tributary, the Blackwater and numerous smaller streams.

The supply is abundant and of an excellent quality.

### ROADS.

Are not in as good condition as could be desired. They are kept up by a road tax, and are improving with the settlement of the county.

### COAL.

The deposits are extensive and of the best qualities.

Six commercial mines operated. Production, year ending June 30, 1897, reported by the State Mine Inspector, 647,666 tons.

The coal has a special value for some purposes; the veins are thick and easily worked, and the mining interests are increasing.

The manufacture of coke is one of the principal industries.

### TIMBER.

The growth is thick and the trees are exceptionally large.

Lumbering has, for some years, been one of the principal industries, still fully one-third of the district is covered with a valuable growth.

Cherry, oak, maple, poplar and spruce are the principal varieties of wood.

Rivers and railroads furnish excellent facilities for getting out logs and lumber.

There are a number of saw mills and wood working establishments.

### FUEL.

The average cost of coal over the entire county is about \$1.50 per ton; in the mining regions it is cheaper. Wood costs about 50 cents a cord.

### COST OF LAND.

Good farm land costs from \$10.00 to \$25.00 per acre and timber land about the same.

### FARM LABOR.

In some sections the supply does not meet the demand, but as a rule it is abundant. Wages are 75 cents per day, including board.

### PRINCIPAL CROP.

Corn; the average yield is 40 bushels to the acre, and it sold last year for 60 cents per bushel.

Wheat, rye and other cereals, also apples, grapes, pears, small fruits and vegetables are cultivated to a certain extent and do well.

Grasses are an important crop, and grazing the principal line of agriculture. The cattle are of an excellent quality. A large portion of the county is especially adapted to sheep raising.

The mining and lumbering operations furnish a good local market, and the larger portion of the products are consumed there. Considerable is shipped to the eastern markets.

### SOCIAL ADVANTAGES.

Towns and villages are numerous along the railroads, but the larger portion is sparsely settled.

About 90 per cent. of the inhabitants are Americans; they are fairly well educated, and as a rule prosperous, especially the farmers.

There are 61 free schools and 41 churches, conveniently located throughout the county.

### GENERAL ADVANTAGES.

High altitude and healthful climate. The soil is fertile and a large portion well adapted to cultivation.

Agricultural products of all kinds do well.

Grazing districts are excellent; sheep raising is especially profitable.

Valuable coal deposits and timber lands.

Shipping facilities are good and markets convenient.

The mineral and agricultural resources have been but slightly developed.

Mining and timber are now the principal sources of wealth.

## PARSONS.

The county seat, is situated on the West Virginia Central and Pittsburg railroad. It is a growing town and is the centre of important mining interests.

## FACTS AND FIGURES.

Tucker county has 307,754 acres of land assessed 1896 at \$972,855; town lots assessed at \$55,118; buildings at \$435,922; personal property at \$452,275; total assessed value, all personal property and of real estate, \$1,916,166.

Personal property consists in part of:

1,489 horses and mules assessed at	\$33,505.
2,085 cattle	“ “ 19,855.
2,509 sheep	“ “ 2,509.
253 hogs	“ “ 1,027.

23 manufacturing establishments, with \$172,122 invested capital, pay 241 employees \$58,038 yearly.

61 public schools, with 2,330 pupils enrolled, employed 73 teachers in 1896.

Value of school houses and school property, \$24,457.

41 churches, all denominations, have a membership of 1,580.

Value of church property, \$19,416.

659 farms of 84,917 acres are valued at \$902,220.

585 acres of land produced 1890, 4,912 bushels of wheat.

3,337	“	“	“	“	“	81,815	“	“	corn.
1,591	“	“	“	“	“	26,624	“	“	oats.

## TYLER COUNTY.

Area, 330 square miles. Population, 11,962.

Is in the northwestern part of the State.

The Ohio river and the Ohio River railroad form the western boundary.

## SOIL.

Dark loam in the bottom land and clay in the uplands. Is fertile and productive.

The greater portion is rolling, valleys are broad. Practically the entire area is suitable for cultivation.

Is in the midst of the largest producing oil field in the State. The wells are numerous and the production is very large.

The supply of natural gas is apparently unlimited.

Iron ore exists in paying quantities, but the extent of the deposits has not been ascertained.

Fire clays of different varieties, also sand and limestone of a good quality for building purposes, is found in different sections.

### WATER.

Middle Island creek flows through the centre of the county from east to west. The Ohio river is on the western border. There are numerous small streams.

The supply is abundant and of a good quality.

### ROADS.

Are in a fair condition; kept up by a road tax and enforced work of male citizens.

### COAL.

There is a good supply. The mining operations at present are confined entirely to supplying the local market. No commercial mines are operated.

### TIMBER.

The forests bordering on the large streams have been pretty well cleared or culled. There are large tracts of wood still standing. Possibly one-third of the county is covered with the original growth.

Oak, poplar, hickory, chestnut, ash and walnut are the principal varieties.

### FUEL.

Coal costs \$1.50 per ton and fire wood \$1.00 per cord.

### COST OF LAND.

Good farm land costs from \$10.00 to \$25.00 per acre, and timber land from \$10.00 to \$15.00 per acre, some of the very best is somewhat more costly.

### FARM LABOR.

As a rule the supply is abundant. Wages range from \$12.00 to \$16.00 per month, including board.



## PRINCIPAL CROP.

The yield of corn per acre is about 50 bushels, of wheat 18 bushels, of potatoes 110 bushels, and of oats 40 bushels. Corn sold for 40 cents, wheat 95 cents, potatoes 85 cents, and oats 35 cents per bushel last year.

There is a great deal of exceptionally fine farming land and all staple crops do well.

Vegetables and fruits, principally apples, peaches, pears and plums, are cultivated extensively.

The grazing land is good and cattle, sheep and hogs are among the principal products.

The surplus live stock and farm products are shipped principally to the Wheeling, Pittsburg and Baltimore markets.

## SOCIAL ADVANTAGES.

The larger portion of the county is comparatively well settled; towns and villages are quite numerous.

There are 95 free schools and 50 churches of various denominations.

About 75 or 80 per cent. of the population are Americans; as a rule they are educated and with but few exceptions prosperous. The foreign population is composed principally of Germans, Irish and English.

## GENERAL ADVANTAGES.

Climate is healthful and mild; water supply is abundant; soil is fertile and productive. Practically the entire region is good agricultural land.

The bottom lands, which are extensive, contain some of the richest and most productive soil in the State.

All agricultural products grow well, cattle and sheep raising are especially profitable.

Markets are convenient and shipping facilities are good. Roads are in a fair condition. There are reasonable prospects for the construction of a railroad to pass directly through the county.

The oil production is now at its height, and there is great business activity.

Agriculture and oil are the principal sources of wealth.

## MIDDLEBOURNE.

The county seat, is situated on the Middle Island creek about 10 miles from the railroad and 57 miles from Wheeling. It has a population of 500 and is one of the most important towns in the western part of the county.

## SISTERSVILLE.

Is an important town situated on the Ohio River railroad. It is the centre of the oil region, an active business place and is growing rapidly.

## FACTS AND FIGURES.

Tyler county has 166,812 acres of land assessed 1896 at \$1,290,-906; town lots assessed at \$51,221; buildings at \$251,759; personal property at \$2,454,500; total assessed value, all personal property and of real estate, \$4,048,406.

Personal property consists in part of:

4,308 horses and mules assessed at	\$182,630.
3,758 cattle	" " 65,485.
7,181 sheep	" " 10,240.
484 hogs	" " 2,395.

29 manufacturing establishments with \$97,332 invested capital, pay 206 employees \$57,850 yearly.

95 public schools, with 3,791 pupils enrolled, employed 106 teachers in 1896.

Value of school houses and school property, \$38,521.

50 churches, all denominations, have a membership of 2,920.

Value of church property, \$30,050.

1,433 farms of 158,661 acres are valued at \$2,942,930.

7,140 acres of land produced 1890, 65,690 bushels of wheat.

10,119 " " " " " 251,801 " " corn.

2,246 " " " " " 33,402 " " oats.

## UPSHUR COUNTY.

Area, 350 square miles. Population, 12,714.

Lies near the centre of the State.

The Buckhannon river and the West Virginia and Pittsburg railroad pass through the centre from north to south.

### SOIL.

Bottom lands are alluvial sandy loam, upland is black loam with clay subsoil; some sand and gravel. Fertile and productive.

Surface is high and rolling; some mountains in the southern part.

Iron ore is found in limited quantities.

Building stone, both lime and sand, especially sand and that of a good quality, is abundant.

Oil has been discovered though not in paying quantities.

### WATER.

The Buckhannon river and numerous small streams.

The supply is abundant for both drinking and agricultural purposes.

### ROADS.

Most of them are in fair condition. The system of enforced labor of male citizens and road tax prevails.

### COAL.

Both the Pittsburg and the Roaring Creek coals are found.

The quality is good and the supply abundant.

No mines are operated except such as are necessary to supply the local demand.

### TIMBER.

Some of the finest timber in the State is found here.

A great deal of the most valuable has been marketed.

Considerable tracts remain, the principal woods being poplar, oak, sugar, maple, beech, gum and some walnut.

### FUEL.

Coal costs from 50 cents to \$1.00 per ton and fire wood costs about the same.

### COST OF LAND.

Farm land costs from \$20.00 to \$40.00 per acre, averaging about \$30.00. Timber land is about \$20.00 per acre, though the amount of commercial timber land for sale is limited.

### FARM LABOR.

The supply is generally sufficient. Wages are from \$12.00 to \$15.00 per month, including board.

### PRINCIPAL CROP.

The entire county is good for agricultural purposes and all crops do well. Corn probably ranks first among the cereals; the yield is from 25 to 50 bushels per acre, some sections going as high as 75 bushels to the acre.

Vegetables and fruits, apples, peaches, pears and plums, are cultivated.

It is peculiarly a grazing county. Blue grass grows naturally and cattle, horses and sheep are the most important products.

Cattle, sheep, lambs, wool and horses are shipped in large numbers to the eastern markets.

Cattle-raising is the principal source of wealth.

### SOCIAL ADVANTAGES.

The inhabitants are generally educated and prosperous; 95 per cent. are Americans; some Germans.

Churches and schools are found in every community; there are 109 free schools and some private institutions. The churches number 81. Social, fraternal and religious organizations are numerous.

### GENERAL ADVANTAGES.

The climate is healthful; soil fertile; water supply abundant; social advantages good; inhabitants are energetic and prosperous; shipping facilities are fair.

There are exceptionally fine grazing districts; cattle raising is one of the most profitable industries.

The county is well stocked with coal that will bring great wealth as it is developed.

Woods have been cleared and the land is largely open for farming.

### BUCKHANNON.

The county seat, has a population of 1,403. It is situated in the northern part of the county, the nearest large city being Charleston, distance 160 miles.

The Normal and Classical Academy, a college with about 200 students, and the West Virginia Conference Seminary, having about 300 students, are located here. The city is the business and social centre of the county.

There are numerous smaller towns and villages.

# FACTS AND FIGURES.

Upshur county has 329,967 acres of land assessed 1896 at \$2,-320,501; town lots assessed at \$221,302; buildings at \$386,223; personal property at \$655,113; total assessed value, all personal property and of real estate, \$3,657,105.

Personal property consists in part of:

4,440 horses and mules assessed at \$70,288.

6,721 cattle " " 79,548.

8,780 sheep " " 10,043.

1,113 hogs " " 2,696.

58 manufacturing establishments with \$476,834 invested capital, pay 341 employees \$118,359 yearly.

109 public schools, with 3,905 pupils enrolled, employed 119 teachers in 1896.

Value of school houses and school property, \$37,055.

81 churches, all denominations, have a membership of 4,592.

Value of church property, \$57,650.

1,649 farms of 176,257 acres are valued at \$3,092,470.

4,143 acres of land produced 1890, 30,703 bushels of wheat.

8,909 " " " " " 190,353 " " corn.

3,294 " " " " " 39,085 " " oats.

## WAYNE COUNTY.

Area, 445 square miles. Population, 18,652.

Is the westernmost county of the State. Borders on Kentucky and the Ohio river.

The Ohio river forms the northern and the Big Sandy river the western boundary.

The Norfolk and Western railroad passes through the centre from north to south and the Chesapeake and Ohio and the Ohio River railroads along the northern border.

## SOIL.

Clay and sandy loam, with some limestone. The surface is generally hilly; the hills slope gently and are not rugged.

River bottom land is abundant and very fertile. With the exception of small tracts the entire county is good agricultural land.

The fire and potters clays are of superior quality and abundant.

There are considerable deposits of ochre and iron ore of a good quality is plentiful.

Building sandstone of a good variety and limestone are found in all parts of the county.

Natural gas appears to be plentiful, though it has not been utilized.

Salt has been discovered, but the strength of the brine has not been determined.

### WATER.

The Ohio and Big Sandy rivers on the borders; the Twelve Pole river with its Right and Left Forks flowing through the centre.

Pure drinking water is plentiful, there are also numerous sulphur springs.

### ROADS.

Are in fair condition; kept up by enforced work of male citizen and a road tax.

### COAL.

There are several varieties, including excellent coking, splint and cannel; the veins are thick and the deposits extensive.

While the supply is abundant and easily worked, the quantity mined is limited, being confined almost entirely to supplying the local market.

### TIMBER.

Valuable commercial woods still cover three-fourths of the county. Large streams on which timber can be floated extend into the forests.

There is exceptionally fine oak, poplar, ash, lynn, beech, birch, maple, some walnut and pine. The supply of tanbark is inexhaustible.

### FUEL.

Coal costs \$1.00 per ton at the bank or mine and cut wood about \$1.00 per cord.

### COST OF LAND.

Good farm land costs from \$10.00 to \$20.00 per acre. The best bottom land comes much higher. Timber land costs from \$5.00 to \$10.00 per acre.

## FARM LABOR.

There is an abundance. Wages are from 50 to 75 cents per day, including board.

## PRINCIPAL CROP.

Corn and wheat. The average yield of corn is 30 and of wheat 12 bushels to the acre.

Oats, tobacco, sorghum, potatoes and all vegetables are cultivated.

Apples, pears, peaches, plums and cherries are among the fruits grown.

Many of the farms compare favorably with any in the State.

Good grazing districts are extensive and cattle, hogs and sheep are among the products shipped to Pittsburg, Cincinnati and other markets.

## SOCIAL ADVANTAGES.

The county is practically in the natural state, undeveloped, except along the railroads and rivers.

95 per cent. of the inhabitants are Americans; some Germans and Italians. The free schools number 149 and churches about 61.

The educational and social advantages are good and improving.

## GENERAL ADVANTAGES.

Healthful climate. Soil as a rule fertile and productive. Beautiful bottom land for tillage and upland for grazing.

Mineral resources are probably as good as any in the State and but partially developed.

Timber is exceptionally fine and abundant.

Water is plentiful; roads in fair condition and shipping facilities all that could be expected.

Good land is cheap. A desirable and extensive territory to be settled.

## WAYNE.

The county seat and probably the principal town, has a population of 550. It is situated on the Norfolk and Western railroad, 21 miles from the Ohio river and but 30 miles from Huntington.

## FACTS AND FIGURES.

Wayne county has 395,048 acres of land assessed 1896 at \$1,858,-

022; town lots assessed at \$351,474; buildings at \$401,455; personal property at \$650,760; total assessed value, all personal property and of real estate, \$3,261,711.

Personal property consists in part of:

3,792 horses and mules assessed at	\$156,883.
8,544 cattle	" " 109,159.
4,429 sheep	" " 4,518.
2,841 hogs	" " 8,327.

27 manufacturing establishments, with \$356,226 invested capital, pay 334 employees \$86,499 yearly.

149 public schools, with 6,070 pupils enrolled employed 151 teachers in 1896.

Value of school houses and school property, \$48,025.

61 churches, all denominations, have a membership of 3,774.

Value of church property, \$26,650.

2,157 farms of 225,941 acres are valued at \$2,226,750.

6,620 acres of land produced 1890, 42,792 bushels of wheat.

30,432 " " " " " 639,393 " " corn.

5,038 " " " " " 50,423 " " oats.

## WEBSTER COUNTY.

Area, 415 square miles. Population, 4,783.

Is in the south central part of the State.

The Elk river flows through the centre from the east to the northwest.

The West Virginia and Pittsburg railroad is in the western portion, and the Holly River road, connecting with the same, enters the northern part.

## SOIL.

Sand loam, white limestone and considerable clay; as a rule it is fertile and productive.

The northern part is a high plateau, portions are mountainous and rough. The greater portion is suitable for cultivation or grazing.

Iron ore exists but the extent of the deposits has not been determined.

Good qualities of fire clay exist, but have not been utilized.

There are salt deposits from which considerable salt was for-



merly obtained; the industry will probably revive with the development of the county.

Limestone is found in some sections and sand building stone.

### WATER.

Two large head streams of the Gauley river in the south; the Elk river in the east, central and northwest; the Little Kanawha touches the northeast border. There are numerous small streams. Pure drinking water is abundant, also mineral springs in different localities.

### ROADS.

In fair condition; kept up by a road tax and enforced work of male citizens.

### COAL.

There is abundant of the best quality. It lies above the water level in good position for mining.

The region is in the New River coal measures of excellent cannel and coking coal.

No commercial mines are now being worked; considerable is mined for local consumption.

### TIMBER.

The growth is among the finest in the State.

The oak, poplar, black spruce, ash, black birch, cherry and other valuable woods were until recently comparatively untouched.

Lumbering operations are now quite extensive, but probably four-fifths of the county is still covered with the virgin growth.

The streams and railroad furnish means for getting the logs and lumber out.

Lumbering is now the principal source of wealth.

### FUEL.

Coal costs about \$1.25 per ton and cut wood from 75 cents to \$1.00 per cord.

### COST OF LAND.

Good farm land is from \$10.00 to \$12.00 per acre and timber land about the same price.

## FARM LABOR.

In most sections the supply is abundant. Wages are 75 cents per day, including board.

## PRINCIPAL CROP.

Corn; the average yield is about 30 bushels to the acre. It sold last year from 30 to 50 cents per bushel. Hay is the second most important crop, the yield being 1½ tons to the acre.

Oats, buckwheat, rye and potatoes are among the staple crops.

Vegetables and fruits, especially apples, do well in certain sections.

Cattle and sheep raising is probably the most important agricultural pursuit.

## SOCIAL ADVANTAGES.

The county is not thickly settled; there are a number of towns, but vast tracts are practically in the natural state.

The inhabitants are sociable, fairly well educated and prosperous; 98 per cent. are Americans, there being a few Germans and Irish.

There are 75 free schools and 29 churches.

## GENERAL ADVANTAGES.

The climate is healthful and the soil as a rule fertile and productive.

Natural grasses grow well and cattle raising is profitable.

Well supplied with coal and other minerals that bid fair to produce wealth as developed.

The forests are magnificent and extensive.

Lumbering is now the principal industry with agriculture and mining for the future.

Shipping facilities are fair.

It is one of the counties that has been but slightly developed.

## ADDISON.

The county seat, has a population of 400. It is conveniently situated near the centre of the county. The Webster Mineral Springs are located here. The springs are 1,430 feet above the sea level and is a health resort of considerable reputation.

## FACTS AND FIGURES.

Webster county has 898,831 acres of land assessed 1896 at \$1,-007,908; town lots assessed at \$18,928; buildings at \$64,500; personal property at \$179,200; total assessed value, all personal property and of real estate, \$1,256,751.

Personal property consists in part of:

1,575 horses and mules assessed at.	\$33,060.
• 3,065 cattle	" " 25,525.
4,830 sheep	" " 4,627.
1,212 hogs	" " 1,758.

75 public schools, with 1,974 pupils enrolled, employed 76 teachers in 1896.

Value of school houses and school property, \$17,792.

29 churches, all denominations, have a membership of 1,175.

Value of church property, \$4,325.

787 farms of 104,689 acres, are valued at \$756,740.

957 acres of land produced 1890, 5,546 bushels of wheat.

4,457	"	"	"	"	"	84,222	"	"	corn.
1,163	"	"	"	"	"	12,520	"	"	oats.

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## WETZEL COUNTY.

Area, 550 square miles. Population, 16,841.

Is situated in the north central part of the State.

The Ohio river and the Ohio River railroad skirt the northwest boundary. The Baltimore and Ohio railroad passes through the northeast section.

## SOIL.

Dark loam and clay, some limestone and gravel; very productive.

Principally rolling in character, some sections hilly; practically all lies well for cultivation.

Natural gas is found in great abundance in the southern and eastern section; it is piped to Pittsburg and other points.

Oil has been discovered in paying quantities, principally in the southern section.

There is considerable limestone and plenty of good building sandstone and building sand.

## WATER.

The Ohio river; Big Fishing creek and the north and south fork of the same.

The supply is plentiful and drinking water is pure and wholesome.

## ROADS.

Ordinarily in good condition; kept up by road tax and work of male citizens.

## COAL.

There is a supply of good coal in workable quantities. It has not been developed, the production being confined to the local demand.

## TIMBER.

Most of it has been marketed. There is a great deal of woodland and possibly one-third of the area is covered with valuable mercantile forests.

White oak is the principal wood standing; there is considerable poplar, walnut, hickory and sugar maple.

## FUEL.

Coal costs \$1.50 per ton and wood about \$1.00 per cord.

## COST OF LAND.

Good farm land sells for \$25.00 per acre and timber land for \$20.00.

## FARM LABOR.

The supply is about equal to the demand. Wages are \$15.00 per month, including board.

## PRINCIPAL CROP.

Corn; the yield is about 40 bushels to the acre; it sells for 40 cents a bushel.

The average yield of wheat last year was 12 bushels, oats 20 bushels, potatoes 35 bushels and hay  $1\frac{1}{2}$  tons to the acre.

The timothy, clover and blue grass hay is exceptionally fine. Buckwheat and tobacco are also among the staple crops.

Owing to the proximity of cities, vegetables and fruits are cultivated extensively.

Cattle raising ranks among the most important of the agricultural interests.

Cattle, hogs and sheep are raised in large numbers.

The wool crop is especially fine and of great value.

Dairy products and poultry are also important.

The cattle and produce is shipped largely to the Pittsburg, Wheeling and Baltimore markets.

Shipping facilities are good.

### SOCIAL ADVANTAGES.

The county is comparatively well settled; the inhabitants are as a rule well educated; the larger portion are prosperous farmers. About 90 per cent. are Americans. The foreigners are principally German and Irish.

There are 123 free schools and 52 churches and a number of fraternal organizations.

### GENERAL ADVANTAGES.

Fertile soil; beautiful climate; good water supply; excellent markets in easy reach; abundant supply of natural gas and oil; large deposits of coal.

Cattle and sheep raising are especially profitable.

Ranks among the best agricultural counties.

Good farming land can be purchased at slight cost.

Natural gas, oil and agriculture are the principal sources of wealth.

New Martinsville and Burton are the principal towns.

### NEW MARTINSVILLE.

The county seat, has a population of 700. It is situated on the Ohio river and the Ohio River railroad at the western extremity of the county.

### BURTON.

Is an important town in the eastern section. It is on the Baltimore and Ohio railroad and is a convenient shipping point for produce intended for the eastern markets.

## FACTS AND FIGURES.

Wetzel county has 228,676 acres of land assessed 1896 at \$1,747,896; town lots assessed at \$61,941; buildings at \$320,000; personal property at \$630,119; total assessed value all personal property and of real estate, \$2,759,956.

Personal property consists in part of:

4,915 horses and mules assessed at	\$104,299.
6,207 cattle	58,208.
10,360 sheep	5,621.
1,334 hogs	5,886.

28 manufacturing establishments with \$131,468 invested capital, pay 142 employees \$32,442 yearly.

123 public schools, with 5,059 pupils enrolled, employed 130 teachers in 1896.

Value of school houses and school property, \$54,295.

52 churches, all denominations, have a membership of 2,264.

Value of church property, \$28,900.

1,695 farms of 167,549 acres are valued at \$3,863,190.

10,322 acres of land produced 1890, 122,476 bushels of wheat.

16,081	"	"	"	"	453,981	"	"	corn.
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4,760	"	"	"	"	93,923	"	"	oats.
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WIRT COUNTY.

Area, 290 square miles. Population, 9,411.

Is in the central western portion of the State.

The Little Kanawha river running through the centre from the southeast to the northwest is navigable for steamboats.

A branch of the Baltimore and Ohio railroad almost touches the northern border, and a branch of the Ohio River railroad runs within easy reach of the southern border. The Little Kanawha River railroad that is now being constructed enters the county from the northeast.

## SOIL.

Principally red clay and limestone. Is an excellent fertile agricultural soil.

Great deal of river and creek bottom land.

The surface is rolling, hills slope gently, and the valleys are broad.

There are extensive deposits of a good quality of iron ore.

The oil wells have been utilized for many years and still produce in paying quantities.

Building sandstone and limestone, also fire and potters clays are found in considerable quantities.

### WATER.

The Little Kanawha river and its tributaries, of which Hughes river, Reedy, Spring, West Fork, and Tucker creeks are the most important.

The supply is abundant and of a good quality.

### ROADS.

In fair condition.

### COAL.

There is an abundance of an excellent quality but it lies deep and cannot be easily worked.

The veins of surface coal are not thick enough to justify commercial mining. The deep veins will evidently, at some future day, be worked.

There is considerable mined for local use.

### TIMBER.

Most of the commercial timber has been cut. There is possibly one-tenth of the original growth standing.

Oak and poplar are the principal woods, some beech and pine.

### FUEL.

Coal costs \$1.75 per ton and wood \$1.00 per cord.

### COST OF LAND.

Very desirable farm land can be bought for \$15.00 or \$20.00 per acre. Timber land costs from \$10.00 to \$25.00 per acre according to the location and wood.

### FARM LABOR.

The supply is abundant. Wages are 50 cents per day, with board.

## PRINCIPAL CROP.

Corn and wheat. The yield of corn, on the average, is 35 bushels and wheat 12 bushels to the acre.

Corn sold for 25 and wheat 90 cents per bushel last year.

The soil and climate are well adapted to a great variety of crops.

Potatoes, tobacco, oats, rye, buckwheat, garden vegetables, apples, peaches, plums, cherries and grapes are among the staple products.

Grazing is probably the most important agricultural pursuit.

The natural grasses grow well. Cattle, hogs, sheep and wool, some fowls, dairy and other products are shipped, principally to the Pittsburg market.

## SOCIAL ADVANTAGES.

The inhabitants are fairly well educated and prosperous, about 95 per cent. of them are Americans.

There are a number of important towns and villages, though there is no railroad and communication is confined to the country roads which are in fair condition.

There are 70 free schools and 35 churches scattered through the county.

## GENERAL ADVANTAGES.

Healthful climate and productive soil, well adapted to general farming. River bottom land is abundant.

Mineral deposits are extensive.

Water supply is abundant.

Shipping facilities are fair, and about to be further improved.

Grazing districts are extensive and of the very best.

Agriculture, especially cattle raising, is the principal source of wealth.

## ELIZABETH.

The county seat, is situated on the Little Kanawha river about 26 miles by boat to the nearest railroad. It has a population of 700, and will be of increased importance with the completion of the railroad now being constructed.

## FACTS AND FIGURES.

Wirt county has 148,447 acres of land assessed 1896 at \$914,308; town lots assessed at \$34,715; buildings at \$161,688; personal



property at \$196,879; total assessed value, all personal property and of real estate, \$1,307,240.

Personal property consists in part of:

2,125 horses and mules assessed at	\$53,822.
2,791 cattle	" " 28,078.
3,240 sheep	" " 3,255.
316 hogs	" " 1,036.

20 manufacturing establishments, with \$150,570 invested capital, pay 211 employees \$56,240 yearly.

70 public schools, with 2,850 pupils enrolled, employed 75 teachers in 1896.

Value of school houses and school property, \$32,038.

35 churches, all denominations, have a membership of 1,979.

Value of church property, \$18,300.

1,124 farms of 120,586 acres are valued at \$1,536,240.

5,043 acres of land produced 1890, 44,457 bushels of wheat.

8,569 " " " " " 162,723 " " corn.

1,607 " " " " " 22,473 " " oats.

## WOOD COUNTY.

Area, 375 square miles. Population, 28,612.

Is in the western part of the State. Borders on the Ohio river.

The Little Kanawha river passes through the centre from the southeast to the northwest.

The Ohio River railroad and the Ohio river form the northern and western boundary and the Baltimore and Ohio railroad passes through the centre from east to west.

## SOIL.

Sandy loam in the bottom land; considerable clay in the uplands. Is very fertile.

Large portion is river bottom, the rest is rolling and somewhat hilly.

The first oil produced in the State was discovered here. Vast quantities have been and are now being produced. Natural gas is also found in paying quantities.

An excellent variety of fire clay is found in large deposits. It

is utilized largely in the pottery works at Parkersburg and elsewhere.

Sandstone, which is abundant, is valuable for building purposes and the manufacture of grindstones. It is utilized and its value is increasing.

Iron ore of a good quality is found in considerable quantities.

### WATER.

The Kanawha and Ohio rivers, Worthington creek, Neals run, Pond run and numerous small streams.

The supply is abundant; drinking water is wholesome.

### ROADS.

In fair condition; kept up by road tax of 40 cents on \$100 valuation.

### COAL.

The deposits of surface coal are not extensive enough to justify commercial mining. There is considerable mined for local consumption.

Beneath the surface the entire county is underlaid with good coal.

### TIMBER.

About half the county is still covered with a valuable growth. Considerable has been marketed.

White and black oak, poplar, hickory and yellow pine are the principal varieties now standing.

### FUEL.

Coal costs \$1.50 per ton and wood about \$1.25 per cord.

### COST OF LAND.

The average cost of farm land is \$20.00 per acre. In some sections the land is very desirable and costs as much as \$50.00 and even more per acre. Timber land costs from \$15.00 to \$20.00 per acre.

### FARM LABOR.

In some sections there is a demand for good labor. Wages range about \$13.00 per month, with board.

## PRINCIPAL CROP.

Corn and wheat. In the bottom land corn will average 50 bushels to the acre. Corn sold for 30 and wheat 75 to 80 cents per bushel last year.

Some of the best farming land in the State is here and the crops are large and diversified.

The cereals, potatoes, melons and garden products of all kinds grow easily.

Apples, peaches and other fruits are cultivated.

Hay is an important product. There are exceptionally fine grazing districts in the uplands. Cattle, hogs, sheep and wool are among the staple products.

Shipping facilities are good and a large percentage of the products are sent to Wheeling, Pittsburg and other markets.

## SOCIAL ADVANTAGES.

The educational facilities are fully up to the average, there being 127 free schools and a number of private institutions. There are also 87 churches of various denominations.

The inhabitants are generally well educated and prosperous.

## GENERAL ADVANTAGES

Climate is healthful; water abundant; soil fertile and shipping facilities by both land and water all that could be desired.

Some of the best farming land in the State is in this county. The crops of vegetables and melons are especially fine.

Large tracts of excellent grazing land.

Extensive deposits of natural gas, oil and minerals.

Has one of the large cities of the State; is comparatively well settled. Social advantages are good and rapidly improving.

## PARKERSBURG.

Is the most important city and the county seat. It had a population of 8,408 in 1890 but has been increasing rapidly.

It is situated at the junction of the Baltimore and Ohio and the Ohio River railroads. It is a flourishing city of importance as a railroad, commercial, manufacturing and shipping point. It has a diversity of manufacturing interests, and is supplied with gas, water works, electricity, fire department, good sewerage, paved streets, street railway, handsome public buildings and stores and

residences and national banks; in fact all the requirements for a completed city.

### FACTS AND FIGURES.

Wood county has 229,082 acres of land assessed 1896 at \$2,407,-420; town lots assessed at \$1,790,070; buildings at \$2,318,475; personal property at \$3,943,675; total assessed value, all personal property and of real estate, \$10,459,638.

Personal property consists in part of:

5,839 horses and mules assessed at	\$194,330.
7,195 cattle	“ “ 97,000.
7,046 sheep	“ “ 7,580.
740 hogs	“ “ 4,010.

172 manufacturing establishments with \$2,882,455 invested capital, pay 1,407 employees \$591,137 yearly.

127 public schools, with 4,946 pupils enrolled, employed 136 teachers in 1896.

Value of school houses and school property, \$59,301.

87 churches, all denominations, have a membership of 7,810.

Value of church property, \$267,950.

2,315 farms of 199,749 acres are valued at \$4,914,490.

13,124 acres of land produced 1890, 141,695 bushels of wheat.

16,691 “ “ “ “ “ “ 433,127 “ “ corn.

4,144 “ “ “ “ “ “ 69,507 “ “ oats.

### WYOMING COUNTY.

Area, 660 square miles. Population, 6,247.

Is situated in the southern part of the State, touching Virginia in the west.

The Guyandotte river flows through the centre from east to west.

The Norfolk and Western railroad forms the southwestern border.

### SOIL.

Principally clay and sandy loam; considerable free stone. Fertile, valleys particularly so.

Much of the land is rolling in character; portions are rough and mountainous.

There is considerable iron and slate, also abundance of good building sandstone and fire clay.

## WATER.

The Guyandotte river and its tributaries, that extend in every direction, give a bountiful supply.

## ROADS.

Are in a fair condition; kept up by enforced work of male citizens.

## COAL.

It is probable that the supply and the variety is greater than in any other county of the State.

Every variety except anthracite is found. The veins are heavy and lie so they would be easy to work.

Every resident of the county has his own coal bank. There is hardly a spot that is not within a mile of a coal vein.

There are no commercial mines; the quantity mined has been confined entirely to the local demand.

With the construction of proposed railroads it will be one of the most important mining regions of the State.

## TIMBER.

The lumber operations have not been extensive. From five-sixths to seven-eighths of the county is still covered with a magnificent virgin growth.

The woods are exceptionally fine. Poplar, oak, hemlock, chestnut and hickory are abundant; there is also considerable walnut.

Facilities for floating out logs are good.

## FUEL.

Almost every resident owns woodland or coal bank, and comparatively little of either is sold. Coal is quoted at 75 cents per ton and wood at \$1.00 per cord.

## COST OF LAND.

The best farm land averages \$25.00 per acre; good land can be bought for \$10.00 per acre. Timber land costs from \$5.00 to \$10.00 per acre, some of the best going as high as \$25.00 or \$30.00.

## FARM LABOR.

There is an abundant supply. Wages are from 50 to 75 cents per day, including board.

## PRINCIPAL CROP.

Corn, the average yield for the county is about 30 bushels to the acre.

While the larger part of the county, as it is cleared of timber, makes good farming land, the agricultural products have not, as yet, assumed large proportions.

The cereals and fruits, particularly apples and peaches, also vegetables, do well; they are all cultivated and to some extent shipped.

The hilly sections are especially adapted and are largely devoted to grazing. Cattle, sheep and wool promise to be among the most important products.

## SOCIAL ADVANTAGES.

This is one of the undeveloped but naturally rich counties of the State. There are a number of towns and villages, some of them quite large, but in the entire district there are only about 10 inhabitants to the square mile. Extensive tracts are open for settlement and development.

There are 76 free schools and 21 churches. As a rule the inhabitants are fairly well educated and prosperous. About 95 per cent. are Americans.

## GENERAL ADVANTAGES.

High altitude, healthful, invigorating climate. There is an abundance of water; soil is fertile and the greater portion well adapted to cultivation.

Good grazing land is abundant.

Forests are extensive and of the finest wood.

Supply of coal is practically unlimited and easily worked.

Agriculture and lumbering are now the principal sources of wealth, with mining to assume an important place in the future.

Land, fuel and all the necessities of life are cheap.

A very desirable county for settlement.

## OCEANA.

The county seat, is situated on the Clear Fork of the Guyandotte river, 15 miles from the Norfolk and Western railroad. It has a population of 420. The distance to Huntington is 184 miles.

# FACTS AND FIGURES.

Wyoming county has 360,061 acres of land assessed 1896 at \$1,-670,115; town lots assessed at \$2,559; buildings at \$62,615; personal property at \$144,924; total assessed value, all personal property and of real estate, \$1,880,211.

Personal property consists in part of:

1,344 horses and mules assessed at	\$44,708.
3,795 cattle	“ “ 36,469.
3,309 sheep	“ “ 3,561.
1,410 hogs	“ “ 2,459.

76 public schools, with 2,293 pupils enrolled, employed 76 teachers in 1896.

Value of school houses and school property, \$15,775.

21 churches, all denominations, have a membership of 1,151.

Value of church property, \$2,000.

862 farms of 119,525 acres are valued at \$944,440.

964 acres of land produced 1890, 4,749 bushels of wheat.

8,737	“	“	“	“	“	135,820	“	“	corn.
2,883	“	“	“	“	“	25,161	“	“	oats.





## **PART IV.**

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REPORT OF FACTORY INSPECTION.



THE INSPECTION OF FACTORIES AND WORK-  
SHOPS.

Section 4 of the law creating the Bureau of Labor, requires that "the Commissioner shall, once in each year, visit and inspect the principal factories and workshops of the State \* \* \* \* and make true report of the result of his inspection."

Together with a list of questions, relative to sanitary arrangements, heating, lighting, ventilation, provisions for separate water closets for male and female employees, guarding of belting, shafting, gearing, etc., protection at elevator openings, and provision for escape in case of fire, the following inspection blank was used and this report shows establishments inspected by the Commissioner of Labor, as required by law.

STATE OF WEST VIRGINIA,  
BUREAU OF LABOR, FACTORY INSPECTION.  
I. V. BARTON, *Commissioner*.

Date.....

Firm or Corporation.....

Industry.....Established.....

Location.....County.....

Character of goods manufactured.....

Value of buildings, ground and machinery.....

Number of buildings.....Description.....

Power—Steam.....Water.....Electricity.....

Total horse power.....Number of boilers.....

Number males employed.....Females.....Total.....

Number of weeks in operation, past year.....

Commissioner's notes.....

.....

.....

I hereby certify, that personal inspection of this establishment has been made, this date, by the Commissioner of Labor and the above information has been officially given.

.....

The law providing for the inspection of the industrial establishments of West Virginia is inadequate, as the power of the Commissioner is limited to investigation.

The real duty of a factory inspector is to enforce the laws. He must see that certain restrictions of law are obeyed, that children of certain ages must not be employed, that guards must be attached to dangerous machines and in case of refusal to comply with his orders, it involves upon him to prosecute the offenders before the proper courts or magistrates.

These duties, it is apparent, are antagonistic to the work of the Labor Commissioner, as he must depend in a great measure on the good will of the employers, to secure information, while the inspector has frequently to oppose the latter's wishes.

It will be seen that the duties of the commissioner and those of a factory inspector, are in no way harmonious, as the work of factory inspection and enforcement of labor laws, may often bring him into conflict with the persons on whom he must depend for reliable statistics, or upon whose sense of fairness, may rest the policy of arbitrating wage or other difficulties, in labor controversies.

Under the present law, no power is given to enforce labor legislation or prosecute offenders.

I would recommend that a law be passed, making efficient provisions for the inspection of factories and workshops, providing for the guarding of belting, shafting, etc., the reporting of accidents to employees, the prohibition of the cleaning of machinery when in motion, provision for escape in case of fire, the ventilation of factories, provision for separate water closets for male and female employees and providing for the appointment of a factory inspector, whose salary should not be less than \$1,000 per year, with an allowance of not less than \$500 per year for contingent expenses, who should report annually to the Commissioner of Labor and who should have power to enforce the law and prosecute all violations, before the proper judicial authorities.

The extent and importance of factory inspection in the United States, is shown in the following interesting report:

# THE INSPECTION OF FACTORIES AND WORKSHOPS IN THE UNITED STATES.

BY W. F. WILLOUGHBY, OF THE DEPARTMENT OF LABOR.

It is important at the very outset to state clearly what is meant by factory inspection in the United States, for, as will be seen when the legislation by which inspection of factories has been provided for is considered, the true function of factory inspection has by no means been invariably understood, even by those enacting the laws or by those to whom the duties of inspection were intrusted.

Factory inspection has followed and has grown in consequence of the enactment of laws regulating the condition of labor in factories and workshops. A little consideration will show that these two classes of legislation are entirely different in character. The province of the first is to specify conditions; of the second, to see that they are enforced. The name of inspection is in some respects misleading. The real duty of factory inspectors is to enforce laws. Their powers of inspection are but incidental to this duty, and are exercised in order that the latter may be more efficiently performed. Yet, in the majority of the States having factory-inspection laws, the inspection of factories was first provided for, and the power of issuing orders directing factory operators to comply with the provisions of the laws, or at least the granting to the inspectors of adequate powers for enforcing them through judicial action, was only granted later as the necessity for such powers became evident. In a word, the inspector of factories is primarily a police officer with special duties.

The failure to recognize this essential character of the inspectors has retarded the development of factory inspection, not only through the failure to give them adequate powers, but by attaching the duties of these officers to other bureaus, to the detriment of the work of both.

As regards the field of duties properly coming within the province of inspectors of factories, there is, of course, opportunity for a wide range of difference of opinion. Speaking generally, their duty is to enforce labor laws so far as they relate to factory work. Beyond this, however, there are a number of laws relating to factories and workshops the enforcement of which would seem to fall equally, if not to a greater extent, within the duties of other officers.

First, for instance, are those relating to the construction of factory buildings—the requirement that fire-resisting materials be

used, etc. The enforcement of these obligations belongs primarily to the office of inspector of buildings.

Secondly, matters relating to the hygiene and sanitary condition of factories—their proper ventilation, heating, and lighting—are duties usually intrusted to health officers.

Thirdly, a most important State duty is that of the inspection of steam boilers and the examination of engineers and firemen to insure that proper persons are given control over them. This duty can be given to a special officer—the inspector of steam boilers—or intrusted to the factory inspectors.

A fourth field of inspection is that of mines, as in a few States where this industry is not of great importance the inspector of factories has been made the inspector of mines as well.

Finally the field of inspection has in cases—notably in Massachusetts—been greatly enlarged by including public buildings, school houses, churches, hotels, theaters, etc., among the buildings that should be inspected by the factory inspectors. In these cases the provisions to be enforced relate principally to the provision of fire escapes and of proper heating, lighting, and ventilation arrangements.

It is inevitable that in the different States the enforcement of these laws should be intrusted to different agencies. In the account that follows, therefore, it must be borne in mind that inspection is considered only in so far as it is performed by factory inspectors. A complete showing of the extent of inspection, except as regards the enforcement of labor laws proper, therefore, is not here made. Thus, for example, it will be seen that in a few instances factory inspectors are required to inspect steam boilers. It does not follow that these are the only States performing this duty. Others may do the same through special inspectors of boilers.

A still further diffusion of inspection work occurs from the fact that laws are frequently passed relating only to the larger cities, the enforcement of which is left to municipal officers. There are thus laws relating specially to New York and Brooklyn, in the State of New York, and to large cities in other States.

This splitting up of the work of inspection, however, applies only to what may be called the supplementary duties of factory inspectors. This is in no way true of factory inspection proper, and the description of the organization and operations of factory inspection that follows gives a complete idea of the extent of factory inspection proper in the United States.

## HISTORY OF THE INSPECTION OF FACTORIES AND WORKSHOPS IN THE UNITED STATES.

The history of the development of the official inspection factories and workshops in the United States is like that of the history of all social legislation. One State has led the way by the enactment

of tentative measures, which it has afterwards developed as dictated by experience. Other States have profited by the example and have taken similar steps. The moral influence of the action of States upon each other in the United States is great. A movement at first grows slowly, but as State after State adopts similar measures the pressure upon others to do likewise becomes stronger, and the movement tends to advance at a constantly increasing rate.

In the field of the inspection of factories we are now in the midst of such a movement. Factory inspection in the United States is of comparatively recent development. Though Massachusetts, the first State to take steps in this direction, enacted its first law providing for the inspection of factories in 1877, it was not until six years later, or in 1883, that its example was followed by another State. New Jersey. Wisconsin in the same year provided for inspection through its bureau of labor. Ohio followed in the succeeding year, 1884. The movement, however, once fairly started has spread with increasing rapidity. In 1886 New York provided for factory inspection. In 1887 Connecticut, Minnesota and Maine did likewise. These were followed by Pennsylvania in 1889, Missouri and Tennessee in 1891, Illinois and Michigan in 1893, and Rhode Island in 1894. There are therefore at the present time fourteen States that have made some provision for factory inspection.

Fourteen States out of forty-five is, of course, a small proportion. As has been stated, however, it is not a completed movement that is being studied. We are rather in the position of one who in the midst of action stops to look back and see what has been accomplished in order better to determine his course for the future.

In considering the progress that has been made, moreover, a comparison should be made not with the total number of States, but rather with the States in which the manufacturing industry is largely developed. It will thus be seen that of the New England and Middle States, all of which are manufacturing States, the smaller States alone,—New Hampshire, Vermont, Delaware, and Maryland—have no inspection. In the Middle Western States, Ohio, Illinois, Michigan, Missouri, Minnesota, and Wisconsin have inspection officers. The far Western and the Southern States, if we except the slight measure of inspection in Tennessee, are absolutely unrepresented. In these States, however, the manufacturing interests are but little developed.

Finally, it is important to recognize that the growth of factory inspection lies not only in the creation of new departments in different States, but in the enlargement of the powers and the broadening of the scope of the work of inspection services after they have once been initiated. The principal development of factory inspection is found in the development of each particular bureau.

An appreciation of this development, therefore can only be had by studying the development of factory inspection in each State in

which action has been taken after which the general features of the movement can be summarized.

#### MASSACHUSETTS.

The State of Massachusetts holds the pre-eminent place among the States as regards social legislation. Just as it has been the first to create a bureau of labor statistics, thus setting an example that has been followed by two-thirds of the other States and several foreign governments, the first to establish a State board of arbitration and conciliation, the first to regulate the employment of women and children etc., so it was the first to provide for the inspection of factories. It would be difficult to overestimate the influence that Massachusetts labor legislation has exerted upon the other States. The imprint of its legislation can be found—frequently verbatim—in the labor legislation of all of the other States. Massachusetts, however, in its turn, owes a great deal to the legislation of Great Britain. This is especially true of factory legislation proper.

Massachusetts inaugurated its work of factory inspection by the passage, May 11, 1877, of the act entitled "An act relating to the inspection of factories and public buildings." This act is remarkable from the fact that it immediately made broad and efficient provisions for the regulation of labor in factories. It provided for the guarding of belting, shafting, gearing, etc.; the prohibition of the cleaning of machinery when in motion; the ventilation of factories; the protection of elevators, hoist ways, etc.; the provision of sufficient means of egress in case of fire, etc. Finally, it directed the governor to appoint one or more members of the State detective force to act as inspectors of factories, with the duties not only of enforcing this law, but other legislation relating to the employment of children and the regulation of the hours of labor in manufacturing establishments.

In 1879 this act was slightly amended by an act that abolished the State detective force and created in its stead a district police force, of which it provided that two or more members should be designated as inspectors of factories. In accordance with this act the governor appointed three inspectors, and the first report of this work was made for the year 1879. This year, therefore, really marks the beginning of factory inspection in the State.

It will not be practicable to mention all of the acts subsequently passed by which new regulations concerning the conditions of labor were enacted and the duties of the inspectors correspondingly increased. Some of the principal stages of the growth of inspection can, however, be briefly mentioned.

In 1880 the duties of inspection were extended to mercantile as well as to manufacturing establishments, and the number of inspectors was increased to 4.

In 1882 the number of members of the police force detailed for inspection work was increased to 5.



In 1885 the district police force was increased to 20, of whom 8 were reported in 1886 as detailed for inspection work.

In 1886 an important increase in the duties of the inspectors was made by the act of June 1, entitled "An act relative to reports of accidents in factories and manufacturing establishments." For the first time, therefore, provision was made for the reporting of accidents to laborers.

The year 1887 was prolific in labor legislation. An act was passed March 24 to secure proper sanitary provisions in factories and workshops; another, April 14, to secure their proper ventilation; a third to secure proper meal hours, and another amending the law relating to the employment of women and children. The number of inspectors was increased from 8 to 10.

By act of March 8, 1888, a much needed reform was accomplished by dividing the district police force into two separate departments of detective work and inspection. According to this act the inspection department was made to consist of 10 members, not including a chief who was also the chief of the detective department. By a supplemental act of the same year the force of inspectors was increased to 20.

March 10, 1890, the law relating to the reporting of accidents was amended so as to make it relate to all proprietors of mercantile and manufacturing establishments, instead of to corporations only, as had been the case under the old law.

In 1891 the force of inspectors was increased to 26, and it was provided that 2 must be women. An important act of this year was that of May 28, 1891, entitled "An act to prevent the manufacture and sale of clothing made in unhealthy places," by which it was attempted to bring under regulation the growing evil of the sweating system. This act was afterwards amended in 1892 and again in 1893.

In 1893 provision was made for the appointment of an additional district police officer, with the duty of inspecting all uninsured steam boilers.

In 1894 the important service was performed of making a codification of all laws relating to labor in factories, the enforcement of which fell within the duties of the inspection department of the district police force.

In 1895 a great increase was made in the inspection duties of the State by the enactment of a law providing for the appointment of 4 inspectors to examine uninsured steam boilers and to act as a board to examine as to the competency of engineers and firemen intrusted with the care of such boilers.

The inspection force at the present time, therefore, consists of 1 chief, 26 inspectors of factories (2 of whom are women), and 4 inspectors of boilers.

#### NEW JERSEY.

New Jersey was the first State to follow the example of Massa-

chusetts and provide for the inspection of factories. Its service was inaugurated by the act of March 5, 1883, entitled "An act to limit the age and employment hours of labor of children, minors, and women, and to appoint an inspector for the enforcement of the same." By this act the governor was directed to appoint an inspector of factories at a salary of \$1,200 a year, whose duties were to inspect all factories, workshops, etc., and to prosecute all violations of law before the proper judicial authorities. He was allowed expenses not to exceed \$500 a year.

In 1884, April 17, a supplemental act was passed providing for the appointment by the inspector of two deputy inspectors, at a salary of \$1,000 a year each. The salary of the chief inspector was increased to \$1,800 and his allowance for contingent expenses to \$1,000. At the same time the original act was modified so as to enable infractions of the law to be better prosecuted. The result of this act was to more than double the efficiency of factory inspection in the State.

April 7, 1885 there was passed what was known as a general factory act, which specified in considerable detail the precautions which must be taken in factories against accidents and the hygienic requirements. The enforcement of this law was intrusted to the factory inspectors.

An act of March 22, 1886, slightly amended this act.

May 6, 1887, a new general factory act was passed in order to amend and elaborate the act of 1885.

In 1889 the number of deputy inspectors was increased from 2 to 6, and the general factory act was amended, especially as regards the provision for fire escapes.

The most important subsequent acts relating to inspection were those of 1893 regulating the sweating system, the enforcement of which was intrusted to the factory inspectors and of 1894, imposing upon the factory inspectors the duty of mine inspection.

At the present time the inspection force of the State consists of 1 chief and 6 deputy inspectors.

#### OHIO.

Ohio enacted its first law in regard to the inspection of factories April 4, 1884. This act called for the appointment of an "inspector of the sanitary condition, comfort, and safety of shops and factories," at a salary of \$1,500, and traveling expenses not to exceed \$600. The duties of this inspector were very limited, indeed. Though he had the power of issuing orders, and non-compliance therewith was deemed a misdemeanor, no provisions were made whereby these infractions could be prosecuted.

April 29, 1885, an act was passed providing for the appointment of 3 district inspectors.

In 1888 an important factory act was passed, bearing date of March 21, whereby the reporting of accidents to laborers was made obligatory upon all manufacturers.

An act of March 23, 1892, made a notable increase in the inspection force by providing for the appointment of 8 additional district inspectors.

The general factory laws were amended by the acts of March 17, 1892, and April 25, 1893, the purposes of which were to regulate the conditions of labor in greater detail, insure that proper precautions be taken against accidents, etc.

At the present time Ohio has 1 chief and 11 district inspectors of factories.

#### NEW YORK.

New York offers an excellent example of the development of factory inspection in a State after the initial step had once been taken. The first act relating to factory inspection was passed May 18, 1886, and was entitled "An act to regulate the employment of women and children in manufacturing establishments, and to provide for the appointment of inspectors to enforce the laws." By this act provision was made for the appointment of a factory inspector at a salary of \$2,000, and an assistant inspector at \$1,500, with an allotment of \$2,500 for contingent expenses.

The following year the legislature greatly extended the inspection service. By an act of May 25, 1887, it authorized the appointment of 8 deputy inspectors, at a salary of \$1,000 each, and the powers and duties of the inspectors were so increased as to give them a supervision over all of the most important features of factory life.

June 15, 1889, the law was again slightly amended.

By an act of May 21, 1890, however, the law was materially changed and made more comprehensive. The most important of the new provisions were those providing for the appointment of 8 women as additional factory inspectors, with the same salary as existing deputies, and increasing the allowance for contingent expenses to \$3,500, exclusive of traveling expenses.

May 18, 1892, an important extension of the province of factory inspection was made by the act of that date, which attempted to bring under regulation the sweating system. Advantage was also taken of the opportunity to collect in a single act most if not all of the laws relating to factories and their inspection. In a way, then, there was created a factory code. The force of inspectors was maintained at the same number, viz, 1 inspector, 1 assistant inspector, and 16 deputies. Salaries, however, were considerably increased, that of the chief inspector being raised to \$3,000, that of the assistant to \$2,500, and that of the deputies to \$1,200 each. Provision was also made for a sub-office in New York City.

In 1893 the law was still further amended by the act of March 22, and made more stringent in its provisions. From the standpoint of inspection the greatest change was that whereby provision was made for 8 additional deputy inspectors, of whom 2 should be women.

The number of inspectors at the present date is, therefore, 26, or 1 chief, 1 assistant, and 24 deputy inspectors.

#### CONNECTICUT.

The State of Connecticut created its service for the inspection of factories in 1887. The act provided for the appointment of an inspector of factories, with the general duty of inspecting factories and seeing that proper precautions were taken against accidents, and proper sanitary regulations observed. This law has remained practically unchanged and unsupplemented until the present time, and provides for far from an efficient system of factory inspection. Though Connecticut has upon its statute books laws relating to the employment of women and children, the provision of proper fire escapes, etc., their enforcement does not seem to be intrusted to the factory inspector. There is also no provision calling for the reporting of accidents in factories. The orders of the inspector consist almost entirely of directions concerning the guarding of machinery or the observance of proper sanitary measures.

There is at the present time but 1 inspector, though an appropriation is made for the appointment of special agents as assistant inspectors. Though the law providing for factory inspection was passed in 1887, the first report seems to have been made for the year 1889.

#### PENNSYLVANIA.

Although Pennsylvania is one of the most important manufacturing States of the Union, the creation of a service of inspection of factories is of comparatively recent date. The first step in this direction was taken by the act of May 20, 1889, entitled "An act to regulate the employment and provide for the safety of women and children in mercantile and manufacturing establishments, and to provide for the appointment of inspectors to enforce the same and other acts providing for the safety or regulating the employment of said persons."

Though its action was considerably delayed, Pennsylvania by this act immediately created an efficient inspection service. The act provided for the appointment of an inspector of factories, at a salary of \$1,500 a year, and 6 deputy inspectors, 3 of whom should be women, at \$1,000 each per annum. The inspectors were given broad powers to order necessary changes and to enforce them through prosecutions before the proper judicial officers. Although the bureau of industrial statistics exercised no supervision whatever over the factory inspector, the latter was required to report to the chief of that bureau, and his early reports, therefore, are included in the reports of that office.

On June 3, 1893, a new act was passed bearing the same title as the act of 1889 and replacing the latter, which practically doubled the efficiency of the inspection service. The number of deputy

inspectors was increased from 6 to 12, 5 of whom should be women, and their salaries raised to \$1,200. The salary of the chief inspector was at the same time raised from \$1,500 to \$3,000. The inspector was also directed to report directly to the governor. His reports, commencing with that for 1893, have therefore appeared as separate volumes.

In 1895 the duties of the inspectors of factories were still further increased by the act of April 11, which was directed to the regulation of the sweating system in the clothing and tobacco industries. In order to provide for the increased work that would thus have to be done, the number of deputy inspectors was increased from 12 to 20.

The present inspection force, therefore, numbers 21—a chief and 20 deputy inspectors.

#### ILLINOIS.

The State of Illinois created an inspection service by the act of June 17, 1893. The immediate cause leading to its establishment was the desire to abolish the manufacture of clothing in tenements, or the so-called sweating system. The act, however, not only contains provisions to this effect, but regulates the employment of women and children generally, and authorized the appointment of inspectors to enforce the act. Provision is made for an inspector at a salary of \$1,500 a year, an assistant inspector at \$1,000, and 10 deputies, 5 of whom must be women, at \$750 each. The power is given to them to enforce their orders through judicial prosecution.

A comprehensive inspection service, however, was by no means created, as the duties of the inspectors are strictly limited to enforcing the provision of the act by which they are authorized, and therefore embrace little but the regulation of the sweating system and the employment of women and children.

#### RHODE ISLAND.

The State of Rhode Island provided for the inspection of factories by the act of April 26, 1894. This act created at once a very efficient system of factory inspection. It not only provided for the appointment of two inspectors, one of whom must be a woman, but regulated the employment of children; directed that all elevators or hoistway entrances should be guarded; that no person under 16 years of age should clean machinery while in motion; that machinery should be guarded; that separate toilet facilities should be provided for female and male employees; that accidents should be promptly reported, and, generally, that the inspector should issue all needful orders to secure the proper heating, lighting, ventilation, or sanitary arrangements of factories and workshops.

The power, moreover, of enforcing their orders was given to

the inspectors by prosecuting delinquents before the proper courts or magistrates.

#### MAINE.

An inspection service was first organized in Maine by the act of March 17, 1887, entitled "An act to regulate the hours of labor and the employment of women and children in manufacturing and mechanical establishments." This act provided for the appointment of a "deputy commissioner of labor" at a salary of \$1,000 per annum, and specified his duties to be "to inquire into any violations of this act, and also to assist in the collection of statistics and other information which may be required for the use of the bureau of industrial and labor statistics." The appointment of assistant deputies, if needed, at a salary of \$2 per day was also authorized.

It will be seen that no really effective system of inspection was provided by this act. The powers of the deputy were strictly limited to that of inspection and report. The means of enforcing his orders, without which inspection has little *raison d'être*, were absolutely wanting.

In 1893 the title of "deputy commissioner of labor" was changed to that of "inspector of factories, workshops, mines, and quarries," a change chiefly significant as showing that the true nature of the office was becoming better understood.

By an act of the legislature, March 29, of the same year, it was made the duty of the inspector to examine concerning the extent to which the law in regard to doors swinging outward was complied with, and as to the sanitary condition of factories, workshops, mines, and quarries, and to report annually to the governor. It was under the provisions of this law that the first report of the factory inspector was issued in 1893. These reports are incorporated in the reports of the bureau of industrial and labor statistics.

Though the law states that it is the duty of the inspector to enforce certain laws, there is no way specified by which this shall be done, and the reports of the inspector do not indicate that he ever ordered any changes to be made or attempted any prosecutions in order to enforce labor laws.

#### MICHIGAN.

The first bill to provide for factory inspection in Michigan was introduced in the State legislature in 1891, but failed to pass. In 1893 another bill was introduced, passed, and went into effect August 25, 1893. The bill as introduced contemplated a separate bureau. As it became a law, it provided that factory inspection should be a part of the work of the bureau of labor and industrial statistics. The title of this act was "An act to regulate the employment of women and children in manufacturing establishments of the State, to provide for the inspection and regulation of such

manufacturing establishments, and to provide for the enforcement of such regulation and inspection."

This act provided for the annual inspection of manufacturing establishments by the commissioner or deputy commissioner of labor, or by persons acting under their authority, for the payment of which \$4,000 should be annually appropriated. This act, in addition to creating an inspection service, also embraces a great many provisions of a general factory act. It thus makes it the duty of the inspectors to see that proper safeguards are taken against accidents; that factories are provided with fire escapes; that suitable toilet facilities are provided for male and female employees in different rooms; that exhaust fans be provided when necessary, etc., and, most important of all, the inspectors were given the power to enforce their orders by prosecutions of all delinquents in the courts of competent jurisdiction.

Michigan thus provided for an efficient system of factory inspection as far as the powers and duties of the inspectors were concerned. The appropriation of only \$4,000 a year for this work was, however, far from sufficient to carry out the work, and the mistake was made of making inspection a branch of the bureau of labor instead of an independent service.

For the first year 4 inspectors were appointed, and for the second year 5 inspectors. In 1895 the act was amended by raising the appropriation for inspection from \$4,000 to \$8,000 a year. No limit was placed upon the number of deputies that might be appointed save by the appropriation.

#### MISSOURI.

By act of May 19, 1879, Missouri created a "bureau of labor statistics and inspection of factories, mines, and workshops." In spite of its title, however, this bureau by no means constituted a bureau of inspection. An examination of the law and of the reports of the bureau shows that the latter's duties were entirely directed to securing information, and not to inspection with the view of enforcing particular laws.

On April 20, 1891, an act relating to the inspection of factories was passed. This act made a considerable number of technical provisions concerning the provision of safeguards against machinery, the guarding of elevator shafts, the reporting of accidents, the provision of fire escapes, etc. This act, however, was made to apply only to cities and towns with a population of 5,000 or over, and made it obligatory upon such to appoint an inspector with deputies to inspect all factories employing 10 or more persons and to see that the provisions of the act were complied with. These inspectors were directed to report semi-annually to the commissioner of labor.

It would be difficult to conceive of a system less likely to be productive of valuable results than this localization of the work

of inspection and distribution of authority. In fact, the commissioner of labor has reported during the succeeding years that this law has been ignored by a great many cities of the State. As yet, therefore, Missouri cannot be said to possess any very effective system of factory inspection.

#### WISCONSIN.

In Wisconsin the law of April 12, 1883, providing for the creation of a bureau of labor, made it a part of the duties of its commissioner to inspect all factories and to see that the laws regarding fire escapes, the protection of employees against accidents, the employment of women and children, etc., were complied with, and to enforce the same by prosecutions before the courts. It was manifestly beyond the power of the commissioner to do more than slightly fulfill these duties.

April 4, 1895, the labor bureau was reorganized, and among other changes provision was made for the appointment of a special inspector of factories as one of the officers of the bureau. At the same time the laws regulating the conduct of labor in factories were considerably elaborated and made more stringent. This law thus provided for a fairly complete system of factory inspection, though but a single inspector was provided for, and he was made an officer of the labor bureau instead of an independent official.

The first report of inspection, therefore, was made for the years 1885 and 1886, and is included in the biennial report of the commissioner of labor. Subsequent reports have appeared in the same way.

In 1887 the inspection laws were enlarged; authority was granted to appoint two inspectors instead of one, and the great defect of prior legislation was remedied by attaching penalties for the violation of the factory acts and increasing the power of the inspectors to enforce their orders and prosecute offenders.

Since this date other acts slightly amending the factory acts have been passed, but the inspection service remains as it was then.

#### MINNESOTA.

The act of 1887 creating a bureau of labor statistics specifies as a part of the duties of the commissioner that he shall cause to be inspected the factories and workshops of the State, "to see that all laws regulating the employment of children and women and all laws established for the protection of the health and lives of operatives in workshops, factories, and all other places where labor is employed are enforced." In case his orders are not complied with, he is directed to make formal complaint to the county attorney, which officer should proceed to the prosecution of the offender.

The first material change in this law was made in 1893. This act, while leaving inspection a part of the duties of the labor bu-



reau, provided for the appointment of a special inspector of factories and two deputy inspectors. The duties of these officers are stated broadly to be "to cause to be enforced all laws regulating the employment of children, minors, and women; all laws established for the protection of the health, lives, and limbs of operatives in workshops and factories, on railroads and in other places, and all laws enacted for the protection of the working classes."

The reports of these inspectors are contained in the biennial reports of the commissioner of labor, the first inspection report being that for the years 1893 and 1894.

#### TENNESSEE.

Such a slight measure of factory inspection has been provided for in Tennessee that the barest mention will be sufficient. The acts of March 21, 1891, creating the bureau of labor and mining statistics, also makes it the duty of the commissioner to inspect factories and workshops. As the power of the commissioner is limited to investigation, and his time is so largely taken up with his other duties, practically nothing is accomplished in the way of real factory-inspection work.

In this history of the organization of factory inspection especial attention should be given to the kind of administrative organization that has in each case been selected. This is one of the most important considerations involved in the question of factory inspection, for the efficiency of the service has been largely dependent upon the system that has been adopted. Six of the fourteen States—Maine, Michigan, Missouri, Minnesota, Wisconsin, and Tennessee—have connected the duty of inspection with the bureau of labor statistics. The adoption of this policy is in every way regrettable. An inspection service, to accomplish the best results, should be absolutely independent of all other work.

The function of the factory inspector is to see that certain laws relating to the conduct of labor in factories are enforced, and to do this he should possess a certain technical knowledge, such as that relating to machinery, to hygiene, ventilation, construction of buildings, etc. The duties of the commissioner of labor are to collect facts and present them properly. The greatest objection to joining the two officers, however, is not that it is difficult to find a man with the mental equipment necessary for them both, but that the two classes of duties are largely antagonistic. The labor commissioner has to depend upon the good will of the employers for his information, while the inspector has frequently to oppose the latter's wishes.

The advisability of an independent inspection service cannot better be shown than by reproducing the remarks of the chief factory inspector of New York concerning the proposition to combine the three services of the bureau of labor statistics, the board of arbitration, and office of factory inspection.

"Such a plan," he said, "if carried out would be to the detriment of the work of factory inspection. The duties of a factory inspector are of police nature. He must see that certain provisions and restrictions of law are obeyed; the children of certain ages must not be employed; that guards must be attached to dangerous machines; that women and children shall not work during certain hours; that unsafe buildings must be made secure, and a score of other matters, concerning all of which he must exercise the compulsory arbitrary powers of the State. In case of refusal to comply with his orders, it involves upon him to swear out warrants for the arrest of the delinquent persons and prosecute them to the full extent of the law. These duties, which are only briefly outlined, are not compatible with the work of gathering statistics and arbitrating differences between employers and employed, especially, as the work of factory inspection may oftentimes bring him into contact, if not into conflict with the very persons to whom appeals must be made for reliable statistics or upon whose sense of fairness must rest the conciliatory policy of arbitrating wage or other difficulties in labor controversies. \* \* \* It will thus be seen that the duties of commissioners of statistics and arbitration and those of the factory inspector are in no way harmonious and are in many respects antagonistic and dissimilar."

Experience has more than demonstrated the correctness of this reasoning. In those States in which factory inspection has been joined to the bureau of labor but relatively slight results have been accomplished, and one might almost say that a real system of factory inspection exists only in the eight States of Massachusetts, New Jersey, Ohio, New York, Illinois, Connecticut, Pennsylvania, and Rhode Island, which have independent inspection services.

### THE DUTIES AND POWERS OF INSPECTORS OF FACTORIES.

We now turn to a consideration of the character of the work that has been assigned to factory inspectors; in other words, to their duties and powers.

As regards the duties of inspectors, it will be seen that they may be divided into a number of quite distinct classes. First, there is the enforcement of certain general labor laws relating to the employment of women and children, the provision of seats for females, and of separate toilet facilities for the two sexes, the payment of wages in cash and at intervals of certain frequency, and the allowance of an adequate length of time to women and children at noon for their lunch.

A second class of duties is that relating to the provision of suitable means of egress in case of fire. This finds expression in the requirement of fire escapes upon factories, and that doors should be so hung as to open outward and to be kept unlocked during working hours.

A third and most important class is that relating to the obligation of factory operators to take all needful precaution to protect workmen against accidents. This is done by providing that machinery and vats containing molten metal or hot liquids must be properly guarded; that machinery must not be cleaned while in motion by women or minors; that mechanical belt and gear shifters be provided; that communication through a speaking tube or otherwise exists between any room where machinery is used and the engineer's room; that elevators be provided with safety appliances, and that they and all hoistway openings be properly railed off; that sides or railings be placed on all stairways; that there be exhaust fans to prevent dust or other deleterious products from being inhaled by the operatives; that no use shall be made of explosive or highly inflammable compounds except under special precautions, and, finally, that exceptional precautions, the determination of which lies largely in the discretion of the inspectors, be taken in the case of all dangerous or injurious occupations.

Fourthly, there are the general provisions relating to the sanitary condition, ventilation, lighting, heating, and overcrowding of factories. Under sanitation it is usual to specify that water-closets, privies, and drains shall be tight and kept in good condition. A few States, it will be seen, require walls to be lime washed or painted once a year.

Fifthly, there is the duty of inspectors keeping a record of all accidents to employees of factories, and of reporting annually concerning them. This information is obtained through the obligation placed by law upon all employers of labor to report all accidents to the inspection department. There are few who are interested in or concerned with the inspection of factories but recognize the utility of obtaining as nearly complete data as possible concerning the occurrence of accidents to laborers, their cause, character, etc. Such information is desirable, first of all, in order to determine which are the industries and the particular manipulations or machines that are responsible for accidents. It is thus possible to determine what steps should be taken for lessening their frequency. It is, secondly, necessary in order that the public and lawmakers may be made to realize the importance of requiring the provision of safety appliances and of the rigid enforcement of precautionary regulations.

The collection of this information, if it is to be made, naturally falls within the province of the factory inspectors. It is much to be regretted, therefore, that these officers for the most part either have not been given the power to obtain this information or have not organized their inquiries on a sufficiently broad basis. Though eight States, as will be seen by the table, provide in their factory laws that accidents shall be reported by manufacturers, in none of them is there any pretense that anything like complete returns of accidents are obtained. Even in the cases of the accidents that are reported, the description of their causes, results and character

is far from sufficiently full. The laws directing the reporting of accidents usually read that the employers of labor shall report to the chief factory inspector all accidents causing the death of an employee or his incapacity to work for a certain duration of time. It is also to be regretted that no uniformity exists in such data in the different States as regards the classification of accidents either by causes, extent of injury, or party at fault. The very important classification of accidents into those causing death, permanent total, permanent partial, temporary total, and temporary partial incapacity is in no case made.

Any attempt to make a study of accidents to labor in factories in the United States is, therefore, out of the question. The only point for congratulation is that the necessity for reporting accidents has been recognized by a number of States, and that thus a beginning has been made that may receive a fuller development in the future.

Within recent years the office of inspector of factories has become of increased importance through the development of the so-called "sweating system," and the attempt to control or abolish it through legislative enactments. Whenever laws have been enacted for this purpose their enforcement through the factory inspectors of the State has constituted an essential feature of the law. In these States, therefore, the regulation of this system of work has become one of the most important duties of the factory inspectors.

The above classes constitute the regular and ordinary duties of factory inspectors. There has been a tendency, however, to impose upon these officers certain additional duties which can be and frequently are intrusted to other officers; such, for instance, are the inspection of mines, the inspection of steam boilers, the inspection of schoolhouses, theaters, and other public buildings.

Finally, one or two States have passed special regulations concerning the conduct of the bread-baking business. These provisions are that such work shall not be carried on in cellars; that work rooms shall not be used as sleeping rooms; that privies and water closets shall not be maintained within a certain distance of the bakeries, etc.

Of all the States, Massachusetts possesses not only the most advanced and detailed code of labor laws but has made the most efficient provision for their enforcement. No better method, therefore, for showing the character of factory inspection in the United States, where it is best developed, can be adopted than to reproduce the summary of the duties of the inspectors of this State, as recapitulated by the chief factory inspector in his report for the year 1895. There is all the more excuse for reproducing the duties of the inspectors of this State, since it is to its laws that all of the States turn when contemplating similar legislation. On page 5 of this report the chief inspector says:

"There are now 26 officers exclusively employed in the inspection

department. Some idea of the extent and nature of the duties of the inspectors may be had by reference to the statutes defining them; but not even the detailed reports of the several inspectors made to this office can give those not familiar with the matters discussed, an adequate idea of the vast amount of labor performed by this department. Its duties embrace the enforcement of the laws relating to the hours of labor; the protection of operatives from unguarded machinery; the employment of women and minors; the schooling of children employed in factories and workshops; the preservation of the health of females employed in mechanical, manufacturing, and mercantile establishments; reports of accidents in manufactories; safety appliances for elevators; provisions for escape from hotels and other buildings in case of fire; proper ventilation for factories and workshops, and uniform meal hours for children, young persons, and women employed therein; the suppression of nuisances from drains, and provisions for water-closets, etc., for the use of each sex employed in factories and workshops, and various other sanitary regulations; the inspection of buildings alleged to be unsafe or dangerous to life or limb, in case of fire or otherwise; the submission to the inspector for approval of a copy of plans and specifications of any building designed for certain public purposes, as factory, workshop, mercantile structure, hotels, apartment houses, lodging or tenement houses, above a certain height; communication between engineer's room and each room where machinery is run by steam, in every manufacturing establishment; proper safeguards at hatchways, elevator openings, and wellholes in public buildings, factories, and mercantile establishments; forbidding the use of portable seats in aisles or passageways in public halls, theaters, schoolhouses, churches, and public buildings during any service held therein; requiring fire-resisting curtains, approved by inspectors, for use in all theaters, etc.; competent watchmen, lights in hotels, gongs or other proper alarms, and notices posted describing means of escape from fire in boarding and lodging houses above a fixed size, family and public hotels; fire escapes on tenement or lodging houses three or more stories in height; prohibiting during working hours the locking of any inside or outside door of any building where operatives are employed; public buildings and schools in respect to cleanliness, suitable ventilation, and sanitary conveniences; the weekly payment of wages by certain corporations to each of their employees; the inspection of uninsured steam boilers; the examination as to the competency of engineers and firemen in charge thereof; the enforcement of the act relating to the manufacture and sale of clothing made in unhealthy places; the enforcement of the act relative to the heating of street-railway cars, and the enforcement of the act requiring specifications to be furnished to persons employed in cotton, worsted, and woolen factories."

It is not necessary at this date, even were this the place, to attempt to show the necessity for, or all the advantages resulting

from, factory inspection. Some of the most important of these latter, however, will bear mention. If it is desirable to have factory and labor laws, it is certainly desirable to have them enforced, and experience has demonstrated that without inspection many labor laws will remain dead letters. But apart from performing the duties for which they are created, they indirectly perform many other services.

Many of the inspectors of factories report that they have been of considerable use in spreading information concerning the best mechanical devices for guarding against accidents. In the performance of their duties they become acquainted with the best contrivances, and are able to suggest their employment in factories inefficiently equipped. The directors of these latter are often only too thankful to have them called to their attention. The reports of the inspectors, moreover, are becoming more and more valuable as being repositories of information concerning labor conditions of a character that cannot be obtained elsewhere. They contain descriptions, accompanied by illustrations, and plans of the best devices for guarding machinery, of protecting elevator and shaft openings, of carrying away dust and odors by the use of exhaust fans, of the best forms of fire escapes, of plans for ventilating and heating factories, schoolhouses, and other buildings, etc. The practical contact of inspectors with labor conditions enables them to determine with especial accuracy the results of labor legislation, and to recommend with authority its amendment or elaboration.

## REPORT OF FACTORY INSPECTION.

ESTABLISHMENTS INSPECTED.	NUMBER EMPLOYED.			No of Weeks in Operation Past Year.
	Male.	Female	Total.	
<i>Charleston, Kanawha County.</i>				
<b>Barton, H. &amp; Son, Boiler Works.</b> Manufactures boilers. Inspected Octo- ber 26, 1897. One building, two-story brick; one boiler, 100 horse power.....	28	.....	28	45
<b>Diamond Ice &amp; Coal Co.</b> Manufactures Ice. Inspected August 24, 1897. One building, brick and frame; four boilers, 280 horse power. Estab- lished 1883. ....	25	.....	25	26
<b>Elk Foundry and Machine Co.</b> Foundry. Manufactures stove cast- ings. Inspected October 25, 1897. One building, two-story frame; one boiler, 50 horse power. Established 1878.....	23	.....	23	40
<b>Hoffman, J. R., Saw Mill.</b> Manufactures lumber. Inspected August 24, 1897. One building, frame; one boiler, 50 horse power. Estab- lished 1882.....	17	.....	17	20
<b>Kanawha Lumber Co., Saw Mill.</b> Manufactures lumber. Inspected August 20, 1897. Established 1887.....	36	.....	36	48
<b>Kanawha Woolen Mills.</b> Manufactures woollens, flannels and yarns. Inspected August 21, 1897.— Five buildings, brick and frame; two boilers, 60 horse power. Established 1885 .....	10	35	45	46
<b>Landon, Kent &amp; Co.</b> Manufactures picture frames and mold- ings. Inspected August 24, 1897.— Three buildings, brick and frame; two boilers, 75 horse power. Established 1880 .....	37	.....	37	52
<b>Thayer, O. A. &amp; W. T.</b> Foundry and Machine Works. In- spected October 25, 1897. Two frame buildings; one boiler, 30 horse power. Established 1871.....	18	.....	18	48

## REPORT OF FACTORY INSPECTION.

ESTABLISHMENTS VISITED.	NUMBER EMPLOYED.			No. of Weeks in Operation Past Year.
	Male.	Female	Total.	
<i>Charleston, Kanawha Co.—Continued.</i>				
<b>Ward, Chas., Boiler Works.</b> Manufactures marine boilers. Inspected October 25, 1897. Two buildings, two-story frame; one boiler, 80 horse power. Established 1887.....	27	.....	27	46
<i>Clarksburg, Harrison County.</i>				
<b>Clarksburg Woolen Co.</b> Wooler Mill. Manufactures flannels and yarns. Inspected October 25, 1897. Two buildings, three-story brick; one boiler, 80 horse power. Established 1881.....	16	10	26	52
<b>Hart, C. &amp; Bro.</b> Foundry and Machine Shops. Inspected October 28, 1897. Three buildings, two-story brick; one boiler, 80 horse power. Established 1879.....	18	.....	18	40
<b>Osbourne, O. H.</b> Foundry & Machine Shops. Inspected October 28, 1897. One building, two-story frame; one boiler, 40 horse power. Established 1867.....	15	.....	15	40
<b>Ward, A. &amp; Son.</b> Foundry & Machine Shops. Inspected October 28, 1897. Two buildings, two-story frame; one boiler, 60 horse power. Established 1873.....	16	.....	16	.....
<i>Farmon, Marion County.</i>				
<b>Amons, John. Carriage Works.</b> Manufactures carriages and Wagons. Inspected October 28, 1897. One building, two-story frame; one boiler, 40 horse power. Established 1889.	14	.....	14	52
<b>Dickison &amp; Bro. Planing Mill.</b> Manufactures blinds doors, etc. Inspected October 28, 1897. One building, two-story frame; two boilers, 100 horse power. Established 1892.....	22	.....	22	47



## REPORT OF FACTORY INSPECTION.

ESTABLISHMENTS INSPECTED.	NUMBER EMPLOYED.			No. of Weeks in Operation in Past Year.
	Male.	Female.	Total.	
<i>Fairmont, Marion Co.—Continued.</i>				
Donnelly, A. H., Foundry. Manufactures drill and fishing tools. Inspected October 28, 1897. One brick building; one boiler, 25 horse power. Established 1894.....	12	.....	12	52
Fairmont Ice Co. Manufactures ice. Inspected Octo- ber 28, 1897. One brick building; two boilers, 80 horse power. Established 1891.....	18	.....	18	26
Fleming, O. J. & Son. Planing Mill. Manufactures sash, doors, etc. In- spected October 28, 1897. One build- ing, two-story frame; one boiler, 50 horse power. Established 1889.....	21	.....	21	43
Humphrey Glass Co., Glass Works. Manufactures bottles. Inspected Oc- tober 28, 1897. Two brick buildings; one boiler, 50 horse power. Estab- lished 1896.....	75	25	100	51
Johns' Bros., Glass Works. Manufactures bottles. Inspected Oc- tober 28, 1897. Two buildings, brick; one boiler, 40 horse power. Estab- lished 1894.....	45	.....	45	50
West Virginia Manufacturing Co. Manufactures candies. Inspected Oc- tober 28, 1897. One building, three- story brick; one boiler, 20 horse power. Established 1894.....	26	10	36	52
<i>Grafton, Taylor County.</i>				
Blachley, Chas. C. Manufactures pumps and hydrants. Inspected October 22, 1897. Two build- ings, frame; two boilers, 120 horse power. Established 1875.....	37	.....	37	52
Crystal Ice Co. Manufactures ice. Inspected October 22, 1897. Two buildings, frame; one boiler, 80 horse power. Established 1896.....	18	.....	18	40

## REPORT OF FACTORY INSPECTION.

ESTABLISHMENTS INSPECTED.	NUMBER EMPLOYED.			No. of Weeks in Operation Past Year.
	Male.	Female	Total.	
<i>Grafton, Taylor Co.—Continued.</i>				
Kennedy, G. W. & Co., Box Factory. Manufactures boxes. Inspected Octo- ber 22, 1897. One building, frame; one boiler, 70 horse power. Established 1891.....	15	.....	15	50
Magill, F. C., Planing Mill. Manufactures sash, doors, etc. In- spected October 22, 1897. Two build- ings, two-story frame; one boiler, 75 horse power. Established 1883.....	35	.....	35	45
Shackleford, Son & Co., Planing Mill. Manufactures sash, doors, etc. In- spected October 22, 1897. One build- ing, two-story frame; one boiler, 60 horse power. Established 1877.....	30	.....	30	52
Swall, O. P., Planing Mill. Manufactures sash, doors, etc. In- spected October 22, 1897. One build- ing, two-story frame; one boiler, 100 horse power. Established 1877.....	20	.....	20	52
White, G. W., Cigar factory. Manufactures stogies and cigars. In- spected October 22, 1897. One build- ing, brick. Established 1879.....	10	10	20	52
Wilhide, S. J. & Sons, Marble Works. Manufactures monuments, etc. In- spected October 22, 1897. Established 1873. ....	7	.....	7	52
<i>Harper's Ferry, Jefferson County.</i>				
Harper's Ferry Brewing Co. Brewery, lager beer. Inspected Octo- ber 19, 1897. Two buildings, three- story brick; one boiler, 80 horse power. Established 1851.....	10	.....	10	52
Harper's Ferry Paper Co. Manufactures spruce ground pulp. In- spected October 19, 1897. One build- ing, two-story brick. Established 1889.	64	.....	64	52

## REPORT OF FACTORY INSPECTION.

ESTABLISHMENTS INSPECTED.	NUMBER EMPLOYED.			No. of Weeks in Operation Past Year.
	Male.	Female	Total.	
<i>Harper's Ferry, Jefferson Co.—Cont'd.</i>				
Shenandoah Pulp Co. Manufactures wood pulp. Inspected October 19, 1897. Two buildings. Es- tablished 1887.	64	.....	64	52
<i>Huntington, Cabell County.</i>				
American Brewing Co. Brewery and ice plant. Brewers lager beer. Inspected October 27, 1897. Two buildings, three-story brick; four boil- ers, 200 horse power. Established 1896.....	70	.....	70	51
Central Veneer Co., Veneer Works. Inspected October 27, 1897. One build- ing, three-story brick; two boilers, 100 horse power. Established 1895.....	75	.....	75	48
Chesapeake & Ohio Ry. Co. Machine shops. Manufactures car axels, etc. Inspected October 26, 1897. Nine buildings, brick and iron; eleven boilers, 2100 horse power, Established 1871.....	550	.....	550	31
Ensign Mfg. Co., Car Works. Manufactures car wheels and axels. Inspected October 27, 1897. Twenty- one buildings brick and frame; four- teen boilers, 2700 horse power. Estab- lished 1872.....	450	.....	450	26
Fitzgerald Plaster Co. Manufactures patent prepared plaster. Inspected October 27, 1897. Two build- ings, three-story brick; one boiler, 80 horse power. Established 1889.....	50	.....	50	42
Gwin Bros., Flour Mill. Manufactures flour and feed. Inspect- ed October 27, 1897. One building, three-story frame; one boiler, 80 horse power. Established 1889.....	21	.....	21	48
Hartzell Handle Co. Manufactures axe and hammer han- dles. Inspected October 27, 1897. Three buildings, one-story frame; two boil- ers, 150 horse power. Established 1866.	55	.....	55	52

## REPORT OF FACTORY INSPECTION.

ESTABLISHMENTS INSPECTED.	NUMBER EMPLOYED.			No. of Weeks in Operation Past Year.
	Male.	Female	Total.	
<i>Huntington, Cabell County.—Cont'd.</i>				
Huntington Mattress Co. Mattress factory. Manufactures ex- celsior mattresses. Inspected October 26, 1897. One building, two story frame; one boiler, 80 horse power. Es- tablished 1889.....	20	11	31	47
Huntington Ice Co. Ice and cold storage. Inspected Octo- ber 27, 1897. Two buildings, three- story frame; four boilers, 200 horse power. Established 1888.....	35	.....	35	26
Jarvis & Bro., Foundry. Manufactures stoves and castings. In- spected October 26, 1897. One build- ing, three-story frame; one boiler, 80 horse power. Established 1879.....	15	.....	15	40
<i>Martinsburg, Berkeley County.</i>				
Auburn Wagon Co., Wagon Factory. Manufactures wagons. Inspected Oc- tober 20, 1897. Four buildings, brick and iron; two boilers, 400 horse power. Established 1880.....	125	.....	125	52
Brooklyn Brass Mfg. Co. Manufactures lamps and brass goods. Inspected October 20, 1897. One build- ing, three-story brick; two boilers, 100 horse power. Established 1896.....	150	.....	150	52
Crawford Woolen Co., Woolen Mills Manufactures woollens, etc. Inspected October 20, 1897. Four buildings, brick and frame; two boilers, 100 horse pow- er. Established 1891.....	70	16	86	52
Fitz, Henry & Son, Flour Mill. Inspected October 22, 1897. One build- ing, brick and stone, four-story; one boiler, 80 horse power. Established 1882.....	75	.....	75	52

## REPORT OF FACTORY INSPECTION.

ESTABLISHMENTS INSPECTED.	NUMBER EMPLOYED.			No. of Weeks in Operation Past Year.
	Male.	Female	Total.	
<i>Martinsburg, Berkeley County.—Cont'd.</i>				
<b>Hannis Distillery Co.</b> Distillers rye and malt whiskies. Inspected October 21, 1897. Three buildings, brick and frame, five stories; four boilers, 200 horse power. Established 1867.....	75	.....	75	52
<b>Henshaw &amp; Lucklider.</b> Grain elevator. Manufactures flour and feed. Inspected October 22, 1897. One building, three-story frame; one boiler, 80 horse power. Established 1879.....	27	.....	27	42
<b>Martinsburg Canning and Storage Co.</b> Canning factory. Manufactures canned goods. Inspected October 21, 1897. Five buildings, brick and stone; two boilers, 200 horse power. Established 1895.....	150	250	400	40
<b>Middlesex Knitting Co.</b> Stocking factory. Manufactures seamless hosiery. Inspected October 20, 1897. Five buildings, brick and stone; three boilers, 250 horse power. Established 1891.....	200	500	700	52
<b>McDowell, H. &amp; Co.</b> Manufactures lime. Inspected October 22, 1897. Two buildings, three-story frame; two boilers, 120 horse power.....	45	.....	45	52
<b>Parks, Alex. Co., Grain Elevator.</b> Manufactures flour. Inspected October 22, 1897. Three buildings, frame; one boiler, 100 horse power. Established 1888.....	40	.....	40	48
<i>Moundsville, Marshall County.</i>				
<b>Brown &amp; Riggs.</b> Flour and Feed. Inspected June 21, 1897. One building, two-story frame; two boilers, 40 horse power. Established 1879.....	4	.....	4	52

## REPORT OF FACTORY INSPECTION.

ESTABLISHMENTS INSPECTED.	NUMBER EMPLOYED.			No. of Weeks in Operation Past Year.
	Male	Female	Total.	
<i>Moundsville, Marshall County. Cont'd.</i>				
Fostoria Glass Co., Glass Works. Manufactures lamps and glassware. Inspected September 11, 1897. Three buildings, brick and iron; two boilers, 60 horse power. Established 1887.....	240	60	300	46
Hess, McMullen & Co. Lumber yard. Manufactures building materials. Inspected June 22, 1897. Three buildings, frame and iron; one boiler, 20 horse power. Established 1894. ....	7	.....	7	50
Risingu, S. & F. Co. Planing mill. Manufactures general mill work. Inspected June 22, 1897. One building, frame; one boiler, 30 horse power. Established 1884.....	6	.....	6	48
Schwob, J. A. Co. Manufactures farm implements. In- spected June 22, 1897. One building, three-story frame; one boiler, 25 horse power. Established 1860.....	6	.....	6	52
Seamon, Henry & Son. Manufactures stogies and cigars. In- spected June 22, 1897. Two brick build- ings; gas engine. 25 horse power. Es- tablished 1858.....	40	60	100	45
<i>Parkersburg, Wood County.</i>				
Bently & Gerwig Furniture Co. Manufactures furniture. Inspected October 23, 1897. One building, four story brick; two boilers, 125 horse power. Established 1881.....	75	.....	75	52
Gratty, J. J. & Co., Tool Works. Manufactures drill tools. Inspected October 23, 1897. One building, brick; one boiler, 100 horse power. Estab- lished 1891.....	20	.....	20	48
Kesselman & Co., Tool Works. Manufactures drill tools. Inspected October 23, 1897. One building, two- story brick; one boiler, 50 horse power. Established 1896.....	10	.....	10	52

## REPORT OF FACTORY INSPECTION.

ESTABLISHMENTS INSPECTED.	NUMBER EMPLOYED.			No. of Weeks in Operation Past Year.
	Male.	Female	Total.	
<i>Parkersburg, Wood Co.—Cont'd.</i>				
Logan Carriage Co. Carriage works. Manufactures carriages, etc. Inspected October 22, 1897. One building, two-story brick; two boilers, 120 horse power. Established 1876.	15	.....	15	50
Novelty Mills. Manufactures flour and feed. Inspected October 22, 1897. One building, three-story brick; two boilers, 120 horse power. Established 1876.....	20	.....	20	52
Parkersburg Brewing Co. Brewers lager beer. Inspected October 23, 1897. Three brick buildings; two boilers, 120 horse power. Established 1889.....	18	.....	18	52
Parkersburg Chair Co. Chair factory. Manufactures chairs. Inspected October 23, 1897. Three buildings, three-story brick; two boilers, 150 horse power. Established 1895.....	120	.....	120	52
Parkersburg Planing Mill Co. Manufactures lumber, laths and boxes. Inspected October 23, 1897. Two frame buildings; seven boilers, 700 horse power. Established 1872.....	152	.....	152	52
<i>Wheeling, Ohio County.</i>				
Acme Box Co., Box Factory. Manufactures wooden packing cases. Inspected June 25, 1897. Three brick and frame buildings; two boilers, 65 horse power. Established 1896.....	21	.....	21	52
Ayars, Herbert Cigar Factory. Manufactures stogies and cigars. Inspected August 8, 1897. One building, brick. Established 1876.....	5	.....	5	25
Baiker Bros. Steam Laundry. Inspected December 7, 1897. One building, two-story brick; one boiler, 20 horse power. Established 1880.....	3	6	9	52

## REPORT OF FACTORY INSPECTION.

ESTABLISHMENTS INSPECTED.	NUMBER EMPLOYED.			No. of Weeks in Operation Past Year.
	Male.	Female	Total.	
<i>Wheeling, Ohio Co.—Cont'd.</i>				
<b>Beleke &amp; Co.</b> Central furniture factory. Manufactures fine furniture. Inspected December 3, 1897. One building, three-story brick; one boiler, 40 horse power. Established 1889.....	20	.....	20	43
<b>Beltz, A., Merchant Tailor.</b> Manufactures custom made clothing. Inspected October 29, 1897. Brick building. Established 1880.....	4	8	12	52
<b>Beltz, J. W. &amp; Sons' Co.</b> Excelsior Planing Mills. Manufactures general mill work. Inspected June 29, 1897. Four buildings, three-story brick; one tubular boiler, 100 horse power. Established 1894.....	24	.....	24	52
<b>Block Bros., The Tobacco Co.</b> Tobacco factory. Manufactures ribbon cut chewing and smoking tobacco. Inspected June 25, 1897. Four buildings, five-story brick; three boilers, 165 horse power. Established 1890.....	97	225	322	50
<b>Bonenberger, Louis.</b> Merchant Tailor. Manufactures custom made clothing. Inspected October 12, 1897. Brick building. Established 1892.....	4	5	9	52
<b>Caldwell &amp; Peterson Mfg. Co.</b> Manufactures metal ceilings, steel and iron roofing, etc. Inspected October 5, 1897. Two-story brick and iron building; one boiler, 65 horse power. Established 1887.....	65	.....	65	52
<b>Calligan, C. E., Merchant Tailor.</b> Manufactures custom made clothing. Inspected October 29, 1897. Two-story brick building. Established 1897.....	1	3	4	49
<b>Central Glass Works.</b> Manufactures lamps and glassware. Inspected June 30, 1897. Two brick and frame buildings; four boilers, 165 horse power. Established 1864.....	300	75	375	40



## REPORT OF FACTORY INSPECTION.

ESTABLISHMENTS INSPECTED.	NUMBER EMPLOYED.			No. of Weeks in Operation Past Year.
	Male.	Female	Total.	
<i>Wheeling, Ohio Co.—Cont'd.</i>				
Davidson Pottery Co., Pottery. Manufactures porcelain china. In- spected November 11, 1897. One build- ing, two-story brick. Established May, 1897.....	12	2	14	.....
Donaldson Carriage Co. Carriage works. Manufactures car- riages and wagons. Inspected Decem- ber 10, 1897. Three-story brick build- ing; one boiler, 70 horse power.....	27	.....	27	48
Elig, Chas. L., Carriage Co. Carriage works. Manufactures car- riages and wagons. Two buildings, six-story brick; two boilers, 75 horse power. Established 1893.....	19	.....	19	52
Exley, Watkins & Co., Preserves. Manufactures catsup, mustard, etc. Inspected June 25, 1897. Four-story brick building and frame shed; two boilers, 55 horse power. Established 1896.....	10	25	35	52
Fisher, B., Foundry. Manufactures stoves and castings. In- spected October 13, 1897. One build- ing, two-story brick; one boiler, 40 horse power. Established 1875.....	30	.....	30	52
Flaccus Bros. Fruit Preserves. Inspected June 29, 1897. One building, two-story brick and frame; two boilers, 75 horse power. Established 1876.....	20	40	60	52
Frank, W. H., Merchant Tailor. Manufactures custom made clothing. Inspected October 4, 1897. Two-story brick building. Established 1822.....	4	10	14	52
Gilleland, R. M., Glue Factory. Manufactures glue. Inspected Decem- ber 3, 1897. Two buildings, two-story brick and frame; two boilers, 200 horse power. Established 1878.....	15	.....	15	52

## REPORT OF FACTORY INSPECTION.

ESTABLISHMENTS INSPECTED.	NUMBER EMPLOYED.			No. of Weeks in Operation in Past Year.
	Male.	Female	Total.	
<i>Wheeling, Ohio Co.—Cont'd.</i>				
Hammond Bros. Cigar Factory. Manufactures stogies and cigars. In- spected October 8, 1897. Two-story brick building. Established 1889.....	18	6	24	50
Hanke, Chas., Cigar Factory. Manufactures stogies and cigars. In- spected October 5, 1897. Two-story brick building.....	3	.....	3	52
Hannan Bros. Cigar Factory. Manufactures stogies and cigars. In- spected October 5, 1897. One frame building. Established 1891.....	7	.....	7	52
Harkins & Schneider. Merchant tailor. Inspected October 4, 1897. Two-story brick building. Es- tablished 1882.....	3	15	18	51
Hein, F. J. & Co. Merchant tailor. Inspected October 4, 1897. Two-story brick building. Es- tablished 1895.....	2	5	7	52
Held, C. F., Cigar Factory. Manufactures stogies and cigars. In- spected October 5, 1897. Two-story brick building. Established 1884.....	4	.....	4	52
Helenbright, L. H. Manufactures stogies and cigars. In- spected October 8, 1897. Two-story brick building. Established 1881.....	3	.....	3	52
Hess, C. & Sons. Merchant tailors. Inspected October 17, 1897. Three-story brick building.	2	4	6	52
Hoffmann, J. G. & Sons Co. Tannery. Manufactures harness leather. In- spected July 8, 1897. Three buildings. brick; two boilers, 120 horse power. Established 1848.....	81	.....	81	52
Holliday, J. A. & Son. Planing mill. Inspected June, 1897. Two buildings, two-story brick; two boilers, 100 horse power.....	25	.....	25	40

## REPORT OF FACTORY INSPECTION.

ESTABLISHMENTS INSPECTED.	NUMBER EMPLOYED.			No. of Weeks in Operation Past Year.
	Male.	Female	Total.	
<i>Wheeling, Ohio Co.—Cont'd.</i>				
Hughes, Thos. & Co., Merchant Tailors. Inspected Oct. 17, 1897. Two story brick building.....	9	61	70	52
Kase, C. A. Manufacturers stogies and cigars. In- spected Oct. 8, 1897. One story brick building.....	10	.....	10	52
Kinney, John J. Brewers ale and porter. Inspected June 23, 1897. Three story brick build- ing, one boiler, 20 horse power. Estab- lished 1884.....	6	.....	6	40
La Belle Iron Works. Manufacturers nails and tin plate. In- spected July 8, 1897. Seven buildings, brick and iron. 2,100 horse power. Established 1852.....	400	30	430	52
Loose, Jacob. Manufacturers stogies and cigars. In- spected Oct. 5, 1897. Two story brick building. Established 1897.....	7	.....	7	52
Loose, Hugo. Manufactures stogies and cigars. In- spected October 5, 1897. Two-story brick building, Established 1870.....	37	7	44	52
Lutz Bros. Laundry. Inspected December 7, 1897, Three-story brick building; one boiler, 20 horse power. Established 1871.....	2	18	20	52
Marsh, M. & Son. Manufactures stogies and cigars. In- spected October 5, 1897. Two-story brick building. Established 1840.....	103	.....	103	52
Miller, John F. Manufactures stogies and cigars. In- spected October 8, 1897. Two-story brick building. Established 1875.....	39	.....	39	52

## REPORT OF FACTORY INSPECTION.

ESTABLISHMENTS INSPECTED.	NUMBER EMPLOYED.			No. of Weeks in Operation Past Year.
	Male.	Female	Total.	
<i>Wheeling, Ohio County—Cont'd.</i>				
Muhn & Branfass. Manufactures stogies and cigars. In- spected October 5, 1897. Two-story brick building.....	9	.....	9	40
McFadden, C. A. Mauufactures stogies and cigars. In- spected October 5, 1897. Two-story Brick building. Established 1897.....	7	.....	7	52
McMechan, George K. & Sons Co. Preserves. Manufactures table delica- cies. Inspected June 29, 1897. Four- story brick building; two tubular boil- ers, 125 horse power. Established 1875.	15	175	190	52
North Wheeling Glass Co. Manufactures flint glass bottles. In- spected July 28, 1897. Three buildings, brick and iron; one boiler, 25 horse power. Established 1878.....	113	3	116	40
Pebler, Martin. Manufactures stogies and cigars. In- spected October 8, 1897. Two-story brick building. Established 1868.....	11	4	15	42
Pollack, Aug. Manufactures stogies and cigars. In- spected October 5, 1897. Two-story brick building. Established 1871.....	76	21	96	44
Reymann Brewing Co. Brewers lager beer. Inspected June 26, 1897. Sixteen buildings, brick and stone; twelve boilers, 1200 horse power. Established 1879.....	100	.....	100	52
Riverside Steel and Iron Co. Manufactures steel plates and tubing. Located at Benwood. Inspected Sep- tember 28, 1897. Forty buildings, brick and iron; 60 boilers, 7825 horse power.	1943	.....	1943	43
Seabright, C. W. Merchant ailor. Inspected October 4, 1897. Three-story brick building. Established 1872.....	9	20	29	52

## REPORT OF FACTORY INSPECTION.

ESTABLISHMENTS INSPECTED.	NUMBER EMPLOYED.			No. of Weeks in Operation Past Year.
	Male.	Female	Total.	
<i>Wheeling, Ohio Co.—Cont'd.</i>				
Schambra, P. C. & Sons. Merchant tailors. Inspected October 4, 1897. Two-story brick building. Es- tablished 1865.....	3	6	9	52
Schambra, D. & Son. Merchant tailors. Inspected October 5, 1897. Two-story brick building.....	6	6	12	52
Schenck, F. & Son. Beef and pork packers. Located at Fulton. Inspected December 10, 1897. Four buildings, two-story brick and frame; two boilers, 300 horse power. Established 1885.....	90	.....	90	52
Schmulbach Brewing Co. Brewers of lager beer. Inspected June 25, 1897. Eight buildings, brick and iron; four boilers, 235 horse power. Established 1882.....	52	.....	52	52
Seigler, Geo. Butcher. Inspected December 10, 1897. Three buildings, two-story frame; one boiler, 80 horse power. Established 1851.....	10	.....	10	52
Smith Brewing Co. Brewers ale and porter. Inspected July 23, 1897. Two-story brick build- ing; one boiler, 10 horse power. Es- tablished 1845.....	6	.....	6	52
Spears Axle Co. Manufactures carriage axles. Inspect- ed June 25, 1897. Two buildings, brick and frame; three boilers, 125 horse power. Established 1838.....	55	.....	55	47
Steinmetz, C., Box Factory. Manufactures wood and paper boxes. Inspected October 13, 1897. Three-story brick building; one boiler, 10 horse power.....	7	20	27	52
Stifel, L. C. & Sons., Calico Works. Manufactures indigo blue prints. In- spected July 19, 1897. Three brick buildings; three boilers, 60 horse pow- er. Established 1835.....	36	.....	36	40

## REPORT OF FACTORY INSPECTION.

ESTABLISHMENTS INSPECTED.	NUMBER EMPLOYED.			No. of Weeks in Operation Past Year.
	Male.	Female	Total.	
<i>Wheeling, Ohio Co.—Cont'd.</i>				
Stout, Morton C. & Co. Merchant tailors. Inspected October 5, 1897. Three-story brick building. Established 1894.....	4	4	8	52
United States Baking Co. Bakery. Inspected June 29, 1897. One three-story brick building; one boiler. 50 horse power. Established 1882.....	27	3	30	52
Warwick China Co. Pottery. Manufactures decorated semi-porcel- lain. Inspected June 29, 1897. Five buildings, three and four-story brick; one boiler, 50 horse power.....	90	110	200	48
Warwood Tool Co. Manufactures heavy hardware. In- spected October 12, 1897. Two-story brick building; one boiler, 85 horse power. Established 1892.....	32	.....	32	52
West Virginia Tobacco Co. Manufactures chewing and smoking tobacco. Inspected June 29, 1897. Four- story brick building; one boiler, 80 horse power. Established 1889.....	4	15	19	30
Wheeler, H. C. & Sons. Merchant tailors. Inspected October 5, 1897. Three-story brick building.....	5	9	14	52
Wheeling Corrugating Co. Manufactures corrugated iron roofing, ceiling, etc. Inspected July 2, 1897. Five buildings, iron, one-story; two boilers, 200 horse power. Established 1890.....	150	5	155	52
Wheeling Hinge Co. Manufactures hinges, etc. Inspected July 10, 1897. Four buildings, three- story brick; two boilers, 10 horse power.	100	25	125	50
Wheeling Mattress Co. Manufactures mattresses. Inspected September 27, 1897. Three-story brick building; one boiler, 10 horse power. Established 1895.....	10	5	15	52

## REPORT OF FACTORY INSPECTION.

ESTABLISHMENTS INSPECTED.	NUMBER EMPLOYED.			No. of Weeks in Operation Past Year.
	Male.	Female	Total.	
<i>Wheeling, Ohio County—Cont'd.</i>				
Wheeling Pottery Co. Pottery. Manufactures queensware. Inspected September 20, 1897. Three buildings, four-story brick; four boil- ers, 270 horse power. Established 1879.	150	350	500	42
Wheeling Stamping Co. Manufactures metal goods, lanterns, etc. Inspected June 30 1897. One three story brick building; one boiler, 50 horse power.....	50	70	120	52
Wheeling Steel and Iron Co. Manufactures Bessemer steel billets. Located at Benwood. Inspected June 23, 1897. Four buildings, brick and iron; twenty-three boilers, 3800 horse power. Established 1885.....	350	.....	350	30
Wheeling Steel and Iron Co. Manufactures skelp iron and steel. Located at Benwood. Inspected June 23, 1897. Three buildings, brick and iron; eight boilers, 2600 horse power. Established 1885.....	350	.....	350	42
Wheeling Steel and Iron Co. Manufactures pig iron. Inspected Sep- tember 18, 1897. Three buildings, brick and iron; six boilers, 1500 horse power. Established 1892.....	150	.....	150	.....
Wheeling Steel and Iron Co. Manufactures sheet iron and sheet steel. Inspected September 18, 1897. Two buildings, brick and iron; eight boilers, 400 horse power. Established 1892.....	100	.....	100	36
Wheeling Steel and Iron Co. Manufactures skelp iron and nails Belmont Department. Inspected June 26, 1897. Eight buildings, brick and iron; twenty-one boilers, 1100 horse power. Established 1892.....	316	.....	316	40

## REPORT OF FACTORY INSPECTION.

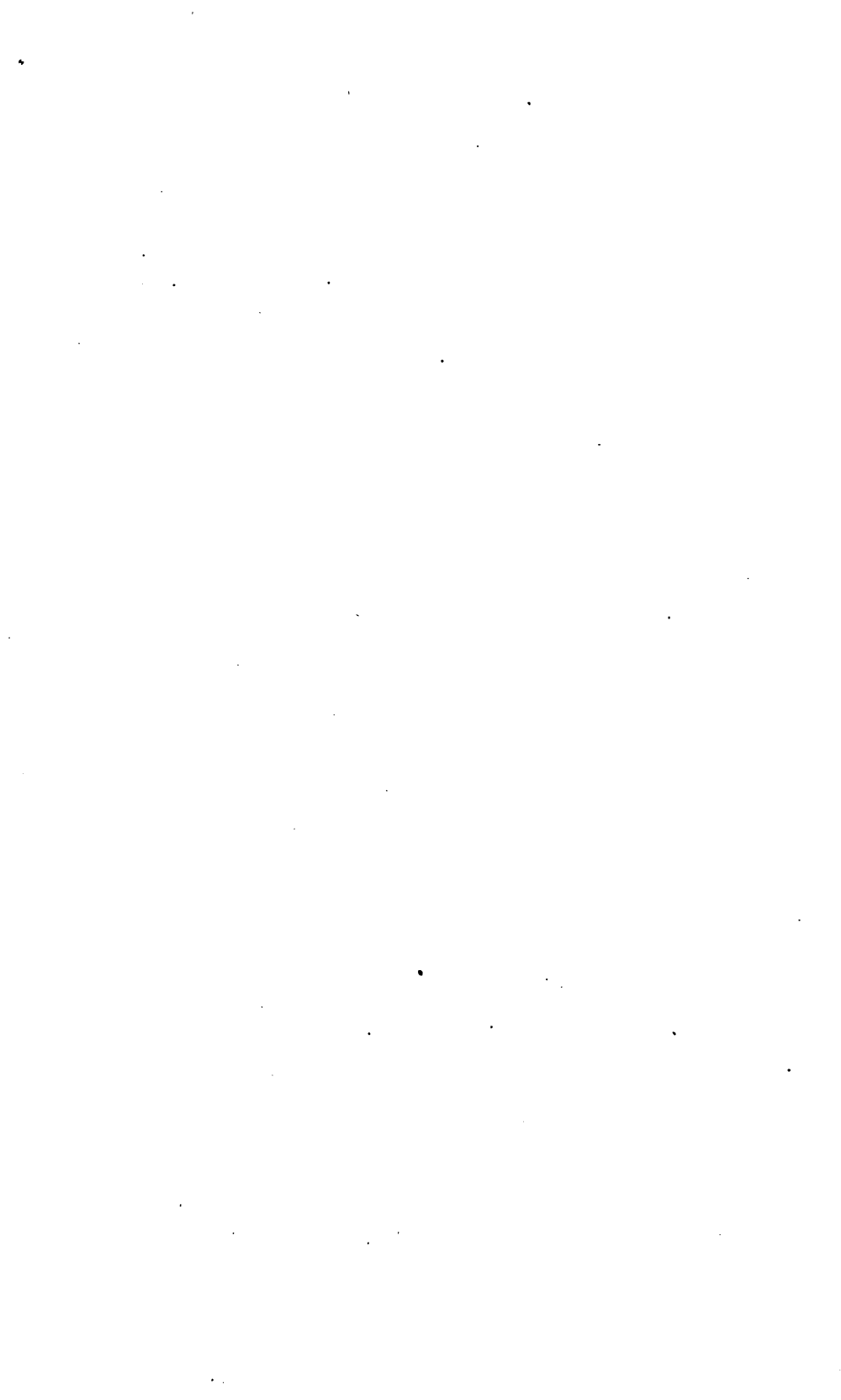
ESTABLISHMENTS INSPECTED.	NUMBER EMPLOYED.			No. of Weeks in Operation Past Year.
	Male.	Female	Total.	
<i>Wheeling, Ohio County—Cont d.</i>				
<b>Wheeling Tent and Awing Co.</b> Manufactures tents and awnings. Inspected October 7, 1897. One brick building; one boiler. Established 1891.....	3	5	8	52
<b>Whittaker Iron Co.</b> Manufactures black and galvanized sheet iron and sheet steel. Inspected December 31, 1897. Six buildings; sixteen boilers, 2500 horse power. Established 1875.....	450	.....	450	26
<b>White Swan Laundry.</b> Inspected December 7, 1897. One building, one story frame; one boiler, 15 horse power. Established 1883.....	2	6	8	52
<b>Wilson, W. A. &amp; Son.</b> Planing mill. Manufactures all kinds of mill work. Inspected July 20, 1897. One building, two story brick; two boilers, 75 horse power.....	25	.....	25	49
<b>Wood Bros. Planing Mill Co.</b> General contractors and manufactures general mill work. Inspected July 20, 1897. Two buildings, three-story brick and one-story frame; one boiler, 125 horse power. Established 1889.....	30	.....	30	52



## **PART V.**

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LABOR LAWS OF WEST VIRGINIA.



## LABOR LAWS OF WEST VIRGINIA.

### CONSTITUTION.

#### ARTICLE 6.—*Exemption from execution, etc.*

SECTION 48. Any husband, or parent, residing in this State, or the infant children of deceased parents, may hold a homestead of the value of one thousand dollars, and personal property to the value of two hundred dollars, exempt from forced sale subject to such regulations as shall be prescribed by law. *Provided*, That \* \* \* no property shall be exempt from sale for taxes due thereon, or for the payment of purchase money due upon said property, or for debts contracted for the erection of improvements thereon.

#### CODE—EDITION OF 1891.

#### CHAPTER 3.—*Time to vote to be allowed employees.*

SECTION 52. Every person entitled to vote at any general national, State or county election, who may be employed by another on the day on which such election shall be held in this State, shall be given some period of four hours, or more if necessary, between the opening and the closing of the polls on said day, for the purpose of enabling such person to repair to his place of voting to cast his vote and return; and any circuit court, or the judge thereof in vacation, may enforce the provisions of this section by mandate, or otherwise, upon the application of any voter. Every officer of any corporation, owner, superintendent, overseer, foreman or other person, who employs or permits to be employed any person against his will, in violation of this section, shall be guilty of a misdemeanor, and fined not less than fifty, nor more than five hundred dollars.

#### CHAPTER 5.—*Protection of employees as voters.*

SEC. 7. \* \* \*; and any corporation which shall, by its officers, agents or otherwise, prevent or attempt to prevent any voter in its employ from attending any election, or from freely exercising his right of suffrage at any election at which he is entitled to vote, by any threat direct or indirect, express or implied, to discharge, or deprive such voter from his employment, or shall dis-

charge or deprive such voter from its employment because of any vote he may cast, or refuse to cast, at any election at which he is entitled to vote, it shall be guilty of a misdemeanor, and shall upon conviction be fined not less than five thousand dollars nor more than twenty thousand dollars for every such offense, at the discretion of the jury.

**CHAPTER 41.—*Exemption from execution, etc.—Personal property.***

SEC. 23. Any husband or parent residing in this State, or the widow, or the infant children of deceased parents, may set apart and hold personal property to the value of not exceeding two hundred dollars, to be exempt from execution or other process, except as hereinafter provided. And any mechanic, artisan or laborer residing in this State, whether he be a husband or parent, or not, may hold the working tools of his trade or occupation to the value of fifty dollars exempt from forced sale or execution. *Provided*, That in no case shall the exemption allowed any one person exceed two hundred dollars.

SEC. 27. After the death of a husband or parent residing in this State, his widow or minor children, or such of them as there may be, may select personal estate of the deceased, not exceeding two hundred dollars in value, and hold the same exempt from any debts or liabilities of the husband or parent contracted or incurred by the deceased in his lifetime. \* \* \*

**CHAPTER 41.—*Exemption from execution, etc.—Homesteads.***

SEC. 30. Any husband or parent residing in this State, or the infant children of deceased or insane parents, may hold a homestead of the value of one thousand dollars, subject to the provisions of section forty-eight of article six of the constitution of this State \* \* \*.

SEC. 34. In case of the death of a husband or parent owning such homestead, the benefit thereof shall descend to his or her minor children, and shall be held and enjoyed by them as such homestead, until all of the said infants attain the age of twenty-one years, unless they sooner die.

**CHAPTER 66.—*Earnings of married women.***

SEC. 14 (as amended by chapter 3, acts of 1893). The earnings of a married woman, or any and all property, real and personal, purchased by her with the proceeds of such earnings, shall in all cases be her sole and separate property, and shall not be subject to the control or disposal of her husband nor liable for his debts. And the separate personal property of every married woman shall be liable to the payment of her debts contracted during coverture, as well after the coverture is terminated as during its continuance.

CHAPTER 74.—*Conditional sales.*

SEC. 3. \* \* \* And if any sale be made of goods, and chattels reserving the title until the same is paid for, or otherwise, and possession be delivered to the buyer, such reservation shall be void as to creditors of, and purchasers without notice from, such buyer, unless a notice of such reservation be recorded in the office of the clerk of the county court of the county where the property is, or in case said goods and chattels consist of engines, cars or other rolling stock or equipment to be used in or about the operation of any railroad, unless such notice be recorded in the office of the secretary of state, who in such case shall record the same in a book to be kept for the purpose, and be entitled to a fee of five dollars or so doing.

CHAPTER 75.—*Mechanics' liens.*

SEC. 2. Every mechanic, builder, artisan, workman, laborer, or other person, who shall perform any work or labor upon or furnish any material or machinery for constructing, altering, repairing or removing a house, mill, manufactory, or other building, appurtenances, fixtures, bridge, or other structure, by virtue of a contract with the owner or his authorized agent, shall have a lien to secure the payment of the same, upon such house, or other structure, and upon the interest of the owner in the lot of land on which the same may stand or to which it may be removed. But the aggregate amount of the liens authorized by this section shall not exceed the amount stipulated in the contract with the owner to be paid therefor, and there shall be no priority of liens as between the parties claiming under this section.

SEC. 3. Every material-man, workman, laborer, mechanic or other person, performing any labor or furnishing any material or machinery, under a contract with a principal contractor or his subcontractor, for the construction, alteration, repair or removal of any house or other structure, provided for in a contract between the owner thereof or his authorized agent and such principal contractor, shall have a lien to secure the payment of the value of the labor performed, and the material or machinery furnished (not exceeding the price for the same stipulated in the contract between such principal contractor or his contractor, and such material-man, laborer or mechanic), upon such house or other structure, and upon the interest of the owner in the lot of land on which the same may stand, or to which it may be removed. The liens authorized by this and the next preceding section shall have priority over any lien created by deed or otherwise on such house or other structure, and the lots on which the same are erected subsequently to the time when such labor shall have been performed, or material or machinery furnished. The laborer and mechanic shall have the first lien, and the liens of laborers mechanics or persons furnishing machinery or material to a contractor, shall take precedence

over any lien already taken or to be taken by the contractor indebted to them; and an assignment or transfer by such head contractor of his contract with the owner, or by a subcontractor of his contract with the head contractor, as well as all proceedings in attachment or otherwise against such head contractor, or a subcontractor, to subject or incumber his interest in such contract, shall be subject to the liens of every laborer, mechanic or material-man who has done any labor or furnished any material for constructing, altering, repairing or removing any such house or other structure under a contract with such contractor or subcontractor. It shall be the duty of such laborer, mechanic or person furnishing material, to file with the owner or his authorized agent, an itemized account of the labor done, or material or machinery furnished, verified by affidavit, within thirty-five days after the same is performed or furnished, and his neglect or failure so to do, shall release the owner from all responsibility, and his property from all lien for any item therein done or furnished prior to the said thirty-five days; and the \* \* \* mechanic or person furnishing the material or machinery, to file with him such itemized account, and the neglect or failure to do so within ten days after receiving such notice, shall release the owner from all responsibility and his property from all lien for all labor done or material or machinery furnished by the person so neglecting or failing prior to the giving of such notice; *Provided, however,* That any laborer or other person employed to do work or furnish material or machinery for the construction, alteration, repair or removal of any house or other structure, by another who may have contracted with the owner therefor, may, before doing any work or furnishing any material or machinery, give the owner of such house or other structure notice in writing, that if he is not paid therefor by the person employing him, he will look to the owner for payment, and it shall not be necessary for the person who has given such notice to file the itemized account with the owner hereinbefore provided, unless he is required by the owner in writing so to do, nor shall his neglect or failure to file the same, unless so required, in any way affect or impair his lien on such house or other structure.

SEC. 4. Every lien provided for in the second and third sections shall be discharged unless the person desiring to avail himself thereof shall, within sixty days after he ceases to labor on, or furnish material or machinery for such building or other structure, file with the clerk of the county court of the county, in which the same is situated, a just and true account of the amount due him, after allowing all credits, together with a description of the property intended to be covered by the lien, sufficiently accurate for identification, with the name of the owner or owners of the property, if known, which account shall be sworn to by the person claiming the lien, or some person in his behalf.

SEC. 5. It shall be the duty of [of] the clerk of the county court of the county to enter every such account in a book by him kept

for the purpose, to be called, "The mechanics' lien record," which shall be properly indexed, and in which he shall state the names of the parties, the amount and character of the claim, and when filed, and the description of the property to be charged by said lien, for which service he shall receive a fee of fifty cents, to be paid by the person claiming the lien. No payment by the owner or his agent, to a contractor, shall affect or impair the lien of a laborer, or material-man, provided for in section three of this chapter. But such owner may limit his liabilities so that the amounts to be paid by him shall not exceed in the aggregate, the price stipulated in the said contracts between himself and the contractor, by having the said contract, or so much thereof, as shows the contract price, and the times of its payment, recorded in the office of the clerk of the county court of the county, where such house or other structure is situated, prior to the performance of the labor and the furnishing of the material, or the machinery for the same. But, if such owner fails to have said contract so recorded, the contractor shall be held to be his agent; and the house or other structure, and the lots on which it is situated, then be held liable for the true value of all labor done, and material and machinery furnished therefor, prior to such recording, although the same may exceed in the aggregate the price stipulated in the contract between the owner and the contractor.

SEC. 6. When the owner fails to perform his part of the contract and by reason thereof the other party without his own default is prevented from completely performing his part, he shall be entitled to a reasonable compensation for as much as he has performed, in proportion to the price stipulated for the whole.

SEC. 7. Every workman, laborer, or other person who shall do or perform any work or labor, by virtue of any contract for any incorporated company doing business in this State, shall have a lien for the value of such work, or labor upon all the real estate and personal property of said company, and such lien shall have priority over any lien created by deed or otherwise on such real estate or personal property, subsequent to the time when the said labor was performed, but there shall be no priority of lien as between the parties claiming, under the provisions of this section. *Provided*, That no lien shall be created under this section for labor performed more than nine months before such lien was recorded.

SEC. 8. Such lien shall be discharged unless the person desiring to avail himself thereof, within sixty days from the time he ceases to work or labor for such incorporated company, shall file with the clerk of the county court of the county in which such work or labor was performed, or in which the principal office, works, real estate or personal property of such incorporated company is situated, a just and true account of the amount due him after allowing all credits; which accounts shall be sworn to by the person claiming them, or by some one in his behalf.

SEC. 9. The clerk of the county court, to whom such account is

presented, shall record the same in the mechanics' lien record, for which service he shall receive fifty cents, to be paid by the person claiming the lien.

SEC. 10. Any person having a lien under or by virtue of this chapter, may enforce the same by filing a bill in chancery in the circuit court of the county in which his account is filed as aforesaid, in which he shall make all other persons having liens thereon under this chapter parties, and any other person acquiring such lien before a decree shall be pronounced in said suit may, at his request, be made a defendant therein and recover his claim in the same manner as if he had been made a defendant at the commencement of the suit. Should the party bringing the suit from any cause fail to establish his claim, the suit shall not for that cause be dismissed, but it may be prosecuted by any other party thereto having such lien, in the same manner as if it had been commenced by him.

SEC. 11. Unless a suit to enforce a lien is commenced within six months after the person desiring to avail himself thereof, shall have filed his account in the clerk's office, as hereinbefore provided, such lien shall be discharged; but a suit commenced by any person having such lien, shall for the purpose of preserving the same, inure to the benefit of all other persons having a lien under this chapter on the same property.

SEC. 14. The citizens of this State shall have a lien upon all domestic steamboats, steamers and vessels, propelled wholly or in part by steam, which ply upon the navigable waters of this State, and which are registered in this State, for all work and labor done upon said vessels, and for all materials, goods, wares and merchandise furnished said vessels; said lien to be enforced by appropriate remedy in courts having jurisdiction of the subject matter.

#### CHAPTER 138.—*Suing as poor persons.*

SEC. 1. A poor person may be allowed by a court to sue or defend a suit therein without paying fees or costs, whereupon he shall have, from any counsel which the court may assign him, and from all officers, all needful service and process, and also the attendance of witnesses, without any fees to them therefor, except what may be included in the costs recoverable from the opposite party.

#### CHAPTER 145.—*Railroads.—Obstructing, injuring property of, etc.*

SEC. 26. If a person maliciously obstruct, remove or injure any part of a railroad or canal, or any bridge or fixture thereof, or obstruct any machinery, work, or engine thereof, whereby the life of any traveler on such road is put in peril, he shall be confined in the penitentiary not less than five years.

SEC. 26a. That any person who shall willfully or maliciously



destroy or injure any of the wires, poles, insulators, or other property or material belonging to any telegraph or railroad company, shall be guilty of a misdemeanor, and, upon conviction, shall be punished by imprisonment in the county jail not exceeding twelve months, and by a fine not exceeding five hundred dollars, at the discretion of the court. Such person shall also be liable in a civil action for all damages to such property caused by such destruction or injury.

SEC. 31. Any person who shall willfully and unlawfully injure, impair, weaken, destroy or misplace any building, bridge, track, side track, switch, spur track, work, engine, machine, locomotive, hand car, depot, car, trestle, telegraph line, telegraph pole, telegraph wire, telegraph instrument, or any other instrument, machine, invention or mechanical appliance whatever, which may be or is now, used by any company operating or using any railroad, or other line or work of internal improvement in this State, or obstruct any corporation which is the owner or lessee of any railroad, or other work of internal improvement in this State, in the use of any such property, the person so offending shall be guilty of a misdemeanor, and fined not exceeding one thousand dollars, and imprisoned not exceeding six months; and if the death of any person occur in consequence of any such unlawful act, the person, or persons, committing the same, shall be guilty of murder, and punished accordingly. \* \* \*

#### CHAPTER 145.—*Intoxication of railroad employees.*

SEC. 30. If any person while in charge of a locomotive engine, running upon the railroad of any corporation, or while acting as the conductor or brakeman of any car or train of cars, on any such railroad, be intoxicated, he shall be deemed guilty of a misdemeanor, and upon conviction thereof, be fined not exceeding five hundred dollars.

#### CHAPTER 148.—*Riots, unlawful assemblies, etc.*

SEC. 1. All judges and justices may suppress riots, routs and unlawful assemblies within their jurisdiction. And it shall be the duty of each of them to go among, or as near as may be with safety, to persons riotously, tumultuously, or unlawfully assembled, and in the name of the law command them to disperse; and if they shall not thereupon immediately and peaceably disperse, such judge or justice giving the command and any other present, shall command the assistance of all persons present, and of the sheriff of the county, with his posse if need be, in arresting and securing those so assembled. If any person present, on being required to give his assistance, or depart, or fail to obey, he shall be deemed a rioter.

SEC. 2. If a person be arrested for a riot, rout or unlawful as-

sembly, the judge or justice ordering the arrest, or any other justice, shall commit him to jail, unless he shall enter into recognizance, with sufficient security, to appear before the circuit court having jurisdiction of the offense, at its then next term, to answer therefor, and in the meantime to be of good behavior and keep the peace.

SEC. 3. If any judge or justice have notice of a riotous, tumultuous, or unlawful assembly in the county in which he resides, and fail to proceed immediately to the place of such assembly, or as near as he may safely, or fail to exercise his authority for suppressing it and arresting the offender, he shall be fined not exceeding one hundred dollars.

SEC. 4. If any person engaged in such assembly, being commanded as aforesaid to disperse, fail to do so without delay, any such judge or justice may require the aid of a sufficient number of persons, in arms or otherwise, and proceed, in such manner as he may deem expedient, to disperse and suppress such assembly, and arrest and secure those engaged in it.

SEC. 5. If by any means, taken under authority of this chapter, to disperse any such assembly, or arrest and secure those engaged in it, any person present, as spectator or otherwise be killed or wounded, any judge or justice exercising such authority, and every one acting under his order, shall be held guiltless; and if the judge or justice, or any person acting under the order of either of them, be killed or wounded in taking such means, or by the rioters, all persons engaged in such assembly shall be deemed guilty of such killing or wounding.

SEC. 6. If any rioter pull down or destroy, in whole or in part, any dwelling house, or assist therein, he shall be confined in the penitentiary not less than one nor more than five years; and though no such house so be injured, every rioter, and every person unlawfully or tumultuously assembled, shall be confined in jail not more than one year and fined not exceeding one hundred dollars.

#### CHAPTER 149.—*Sunday Labor.*

SEC. 16. If a person, on a Sabbath day, be found laboring at any trade or calling, or employ his minor children, apprentices, or servants in labor or other business, except household or other work of necessity or charity, he shall be fined not less than five dollars for each offense. And every day any such minor child, or servant, or apprentice is so employed, shall constitute a distinct offense. \* \* \*

SEC. 17. No forfeiture shall be incurred under the preceding section \* \* \* for running any railroad train or steamboat on the Sabbath day \* \* \*; and no forfeiture for laboring on the Sabbath day shall be incurred under the said section, by any person who conscientiously believes that the seventh day of the week ought to be observed as a Sabbath and actually refrains from all

secular business and labor on that day, provided he does not compel an apprentice or servant not of his belief to do secular work or business on Sunday, and does not on that day disturb any other person in his observance of the same. And no contract shall be deemed void because it is made on the Sabbath day.

*Coal mine regulations and inspection.\**

(Acts 1897, chapter 59)

SEC. 1. The governor of the State, by and with the consent of the senate, shall appoint one mine inspector for each of the four mining districts created by this act, and a chief mine inspector, who shall supervise and control the mine inspection of the State of West Virginia, and the chief shall have the power to call the assistance of any one of the other four mine inspectors to any district in the State of West Virginia in case of emergency. And shall keep the reports furnished him by the four mine inspectors, and in addition thereto he shall copy said reports in a book or books by him purchased and kept for the purpose, and he shall index the same, and said books shall be open for inspection upon the request of any citizen of the State, and upon the request of the governor or attorney general of this State, said chief mine inspector shall lay said books and reports before either of said officers, and also maps of mines furnished him by said mine inspectors.

Any chief mine inspector who shall violate any of the provisions of this act, shall, upon conviction thereof, be fined not less than twenty-five nor more than two hundred dollars, and may, in the discretion of the court, be imprisoned in the county jail not exceeding one year.

And each of the four mine inspectors shall report in writing monthly to the chief inspector, the number and condition of all the mines inspected by him during each month. The chief inspector shall have power to remove any of the four mine inspectors mentioned in this act for causes heretofore mentioned in this act, and the governor of the State shall fill all vacancies caused by removal from office.

Mine inspectors created by this act shall hold their office for the term of four years, as hereinafter provided, unless they be sooner removed, as hereinafter provided. They shall continue in office until their successors in office are appointed and qualified.

Every person so appointed must be a citizen of West Virginia, having a practical knowledge of mining and properly ventilating and draining mines, and must be a coal miner of at least six years experience as a miner in the coal mines, and he shall not, while in office, be interested as owner, operator, agent, stockholder, superintendent or engineer of any coal mine, and he shall be of good moral character and temperate habits. An inspector of mines shall be removed from office by the chief mine inspector of this

\*See Decision, page 415.

State for incompetency, neglect of duty, drunkenness, malfeasance and for other good causes.

SEC. 2. Vacancies in office of inspectors shall be filled by appointment by the governor of the State for the unexpired term.

Every person appointed inspector of mines shall, before entering upon the discharge of the duties of his office, take the oath before some person authorized by law to administer oaths, that he will support the constitution of the United States and the constitution of the State of West Virginia, and that he will faithfully and impartially, to the best of his ability, discharge the duties of his office and file a certificate of his having done so in the office of the secretary of state, and he shall give a bond in the penalty of two thousand dollars, with sureties to be approved by the governor of the State, conditioned that he will faithfully discharge the duties of his office.

The salary of the chief inspector shall be twelve hundred dollars per annum and not more than three hundred dollars for expenses, and the other four mine inspectors shall have one thousand dollars salary, each, per annum, and not more than three hundred dollars for expenses. Such salary and expenses shall be paid monthly out of the State treasury; *Provided*, That before payment of traveling expenses shall be made to the inspector, he shall file an account of such expenses and make out and file with the auditor that they were accrued in the discharge of his official duties.

On the first Tuesday in April, one thousand eight hundred and ninety-seven, and every four years thereafter, the governor of the State shall, with the consent of the senate, appoint one mine inspector for each of the four mining districts of the State created by this act, whose term of office shall begin when he has taken the oath of office and has given the approved bond, as required by this act, and whose term of office shall be four years, or until his successor shall be duly appointed and qualified.

SEC. 3. And it shall be his duty to visit each mine in his district at least once in every three months, and it shall be unlawful for any mine inspector to do any surveying for any mine owner or owners, during his term of office, and it shall be unlawful for any mine inspector to appoint any deputy or other person to do and perform any work required of such mine inspector, and it shall be his duty to personally perform the duties of his office hereunder.

Any mine inspector failing to comply with the requirements of this act, shall be guilty of a misdemeanor and upon conviction thereof shall be fined not less than one hundred dollars nor more than five hundred dollars, and be dismissed from office.

The governor of the State of West Virginia, together with the chief mine inspector created by this act, shall divide the State of West Virginia into four mining districts.—*Code, Edition of 1891, Appendix, Page 991.*

SEC. 4. Each inspector shall examine the mines of his district at least twice every year, and oftener if called upon by twenty

miners engaged in any one mine, and he shall see that all the provisions of this act are observed and strictly carried out. He shall particularly examine into the condition of the mines as to ventilation, drainage and general safety, and shall make a record of all such examinations. He shall also for each year ending with the thirtieth day of June, make a written report to the governor, of his proceedings as such inspector, stating therein the number of mines in his districts, the thickness of the seams mined, the number of miners employed in each mine, the condition in which the mines were found, the extent to which this act is obeyed or violated, the number of accidents and deaths resulting from injuries received in or about the mines, with the cause of each of such accidents and deaths, and such other information in relation to mines and mining, as he may deem of public interest. He shall also suggest or recommend such legislation on the subject of mining as he may think necessary. Such report shall be filed with the governor on or before the thirtieth day of December, next succeeding the year for which it is made.

SEC. 5. The operator or agent of every coal mine shall, within six months after the passage of this act, make, or cause to be made, an accurate map or plan of such mine, on a scale to be stated thereon, not exceeding one hundred feet to the inch. Such map or plan shall show the openings or excavations, the shafts, slopes, entries, airways, headings, rooms, pillars, etc., the general inclination of the coal strata, and so much of the property lines and of the outcrop of the coal seam of the tract of land on which said mine is located, as may be within one thousand feet of any part of the workings of such mine. A true copy of such map or plan, shall, within the six months aforesaid, be delivered by such operator, to the inspector of his district, to be preserved among the records of his office and turned over to his successor in office; and the original map or a true copy thereof, shall be kept by such operator, at the office of the mine, and open at all reasonable times for the examination and use of the inspector; and such operator shall twice within every twelve months, and not more than seven months apart while the mine is in operation, cause such mine to be surveyed and the map thereof extended so as to accurately show the progress of the workings, of the property lines and outcrop as above provided; and he shall immediately thereafter deliver, to the inspector of his district, a map or plan and statement of the progress of the workings and extensions aforesaid, so as to enable the inspector to trace the same on the map or plan furnished him as above required. Before any mine or part of a mine is abandoned, or the pillars drawn therein, it shall be accurately surveyed, and the maps thereof extended as aforesaid, and within one month after any mine is abandoned, the person who was the last operator thereof, shall file with the clerk of the county court of the county, in which the mine is located, a correct map, showing all the excavations of such mine, to be preserved as a part of the

records of the county. If any operator fail to comply with any provision of this section, the inspector is hereby authorized to have the survey and maps made or extended, as may be necessary in such case, at the expense of such operator, and the reasonable fees and expenses may be recovered in any court of competent jurisdiction, by the person performing the work.

SEC. 6. After six months, from and after the passage of this act, it shall be unlawful for the operator, or agent, of any coal mine, to employ any persons at work in said mine, or permit any persons to be in said mine for the purpose of working therein, unless they are in communication with at least two openings or outlets, separated by natural strata, of not less than one hundred feet in breadth, if the mine be worked by shaft, and of not less than fifty feet in breadth if worked by slope or drift. To each of said outlets there shall be provided, from the interior of the mine, a safe and available roadway, which shall at all times while the mine is in operation be kept free from all obstructions that might prevent travel thereon in case of an emergency, and if either of said outlets be by shaft, it shall be fitted with safe and available appliances, such as ladders, stairs, or hoisting machinery, which shall, at all times, when the mine is in operation, be kept in order and ready for immediate use, whereby persons employed in the mine may readily escape in case of an accident. This section shall not apply to any mine while work is being prosecuted with reasonable diligence in making communication between said outlets, so long as not more than twenty persons are employed at any one time in said mine; neither shall it apply to any mine, or part of a mine, in which the second outlet has been rendered unavailable by reason of the final robbing of pillars preparatory to abandonment, so long as not more than twenty persons are employed therein at any one time.

SEC. 8. The operator or agent of every coal mine worked by shaft shall forthwith provide, and hereafter maintain, a metal tube from the top to the bottom of such shaft, suitably adapted to the free passage of sound, through which conversation may be held between persons at the top and at the bottom of the shaft; also the ordinary means of signaling, and an approved safety catch and a sufficient cover overhead on every carriage used for lowering or hoisting persons, and at the top of the shaft an approved safety gate, and an adequate brake on the drum of every machine used to lower or hoist persons in such shaft; and the said operator or agent shall have the machinery used for lowering or hoisting persons into or out of the mine, kept in safe condition and inspected once in each twenty-four hours by some competent person.

SEC. 9. No operator or agent of any coal mine, worked by shaft or slope, shall place in charge of any engine used for lowering into or hoisting out of said mine, persons employed therein, any but competent and sober engineers; and no engineer in charge of such machinery shall allow any person except such as may be de-

puted for that purpose, by the operator or agent, to interfere with any part of the machinery; and no person shall interfere with or intimidate the engineer in the discharge of his duties; and in no case shall more than ten persons ride on any cage or car at one time, and no person shall ride on a loaded cage or car in any shaft or slope. All slopes or engine planes, used as traveling ways by persons in any mine, shall be made of sufficient width to permit persons to pass moving cars with safety, or refuge holes of ample dimensions, and not more than sixty feet apart, shall be made on one side of said slope or engine plane. Such refuge holes shall be kept free from obstructions, and the roof and sides thereof shall be made secure.

SEC. 10. The operator or agent of every coal mine, whether worked by shaft, slope or drift, shall provide and hereafter maintain for every such mine, ample means of ventilation, affording not less than one hundred cubic feet of air per minute for each and every person employed in such mine, and as much more as the circumstances may require, which shall be circulated around the main headings and cross headings and working places to an extent that will dilute, render harmless and carry off the noxious and dangerous gases generated therein; and as the working places shall advance break-throughs for air shall be made in the pillars, or brattices shall be used, so as to keep such working places well and properly ventilated. All mines generating firedamp shall be kept free of standing gas in the worked out or abandoned parts of the same as far as practicable, and the entrances thereto shall be properly closed and cautionary notice posted to warn persons of danger, and the doors used therein for directing ventilation shall be so hung as to close themselves, and every working place and all other places where gas is known to exist or is liable to exist, shall be carefully examined by some competent person appointed for that purpose, to be known as "fire boss," immediately before each shift, with a safety lamp, and in making such examinations it shall be the duty of the fire boss at each examination, to leave at the face of every place so examined, evidence of his presence, and no workman shall enter or be permitted to enter, any mine or part of a mine, generating firedamp until it has been examined by the fire boss as aforesaid, and reported by him to be safe. In all mines generating firedamp accumulations of fine, dry coal dust shall as far as practicable be prevented, and such dust shall, whenever necessary, be kept properly watered down. The safety lamps used for examining any mine, or which may be used for working therein, shall be furnished by, and be the property of the operator of the mine, and shall be in charge of an agent thereof; and at least one safety lamp shall be kept at every coal mine whether such mine generates fire damp or not.

SEC. 11 In order to secure the proper ventilation of every coal mine and promote the health and safety of persons employed therein, the operator or agent shall employ a competent and prac-

tical inside overseer, to be called "mining boss," who shall be a citizen and an experienced coal miner, or any person having two years' experience in a coal mine, and shall keep a careful watch over the ventilating apparatus and the airways, traveling ways, pumps and drainage; and shall see that as the miners advance their excavations, proper break-throughs are made as provided in section ten of this act, and that all loose coal, slate and rock overhead in the working places, and along the haul ways, be removed or carefully secured so as to prevent danger to persons employed in such mines; and that sufficient props, caps and timbers are furnished of suitable size and cut square at both ends, and as near as practicable to the proper lengths for the places where they are to be used and such props, caps and timbers shall be delivered and placed in the working places of the miners, and every workman in want of props or timbers and cap pieces, shall notify the mining boss or his assistant of the fact at least one day in advance, giving the length and number of props or timbers and cap pieces required; but in case of an emergency, the timbers may be ordered immediately upon the discovery of any danger; and the place and manner of leaving the orders for timbers shall be designated in the rules of the mine; and shall have all water drained or hauled out of the working places before the miners enter, and the working places kept dry, as far as practicable, while the miners are at work. On all haul ways, space not less than ten feet long and two feet six inches wide between the wagon and the rib, shall be kept open at distances not exceeding one hundred feet apart, in which shelter from passing wagons may be secured. It shall further be the duty of the mining boss to have bore holes kept not less than twelve feet in advance of the face, and, when necessary, on the sides of the working places that are being driven towards and in dangerous proximity to an abandoned mine or part of mine suspected of containing inflammable gases or which is filled with water. The mining boss or his assistant shall visit and examine every working place in the mine at least once in every three days, and oftener when necessary, while the miners of such places are at work, and shall direct that each and every working place shall be secured by props or timbers whenever necessary so that safety in all respects be assured, and no person shall be directed to work in an unsafe place, unless it be for the purpose of making it safe. The mining boss shall notify the operator or agent of the mine of his inability to comply with any requirements of this section; it shall then become the duty of such operator or agent at once to attend to the matter complained of by the mining boss, to comply with the provisions hereof.

SEC. 12. The operator or agent of every coal mine shall furnish the inspector proper facilities for entering such mines, and making examinations or obtaining information; and if any inspector shall discover that any mine does not in its appliances, for the safety of the persons employed therein, conform to the provisions of this



act, or that by reason of any defect or practice in or at such mine, the lives or health of persons employed therein, are endangered, he shall immediately, in writing, notify such operator or agent thereof, stating in such notice the particulars in which he considers such mine to be defective or dangerous, and if he deem it necessary for the protection of the lives or health of the persons employed in such mine, he shall, after giving notice to the said operator or agent, of his intention so to do, apply without bond to the circuit court of the county in which said mine is located, or to the judge thereof in vacation, for an injunction to restrain the operating of said mine until said danger be removed; and such court or judge, when so applied to, shall at once proceed to hear the case and determine the same, and if the cause appear to be sufficient, and such danger appear to exist, after hearing the parties and their evidence, he shall issue an injunction restraining the operating of said mine until the cause of such danger be removed, and the cost of the proceedings, including the charges of the attorney prosecuting the same, shall be borne by the operator of the mine, but no fee exceeding twenty-five dollars shall be taxed in any one case for the attorney prosecuting such case; but if said court or judge shall find the cause not sufficient, then the case shall be dismissed and the costs shall be paid by the county in which the mine is located.

SEC. 13. No boy under twelve years of age, nor female person of any age, shall be permitted to work in any coal mine, and in all cases of doubt, the parents or guardians of such boys shall furnish affidavits of their ages.

SEC. 14. No miner, workman or other person shall knowingly injure any shaft lamp, instrument, air course or brattice, or obstruct or throw open airways or carry matches or open lights into places worked by safety lamps, or disturb any part of the machinery, open a door used for directing the ventilation, and not close it again, or enter any part of a mine against caution, or disobey any order given in carrying out any of the provisions of this act, or do any other act, whereby the life or health of any person employed in the mine, or the security of the mine endangered. Nor shall any person or persons or combination of persons by force, threats, menace or intimidation of any kind, prevent or attempt to prevent from working in or about any mine, any person or persons who have the lawful right to work in or about the same, and who desire so to work; but this provision shall not be so construed as to prevent any two or more persons from associating themselves together under the name of Knights of Labor, or any other name they may desire, for any lawful purpose, or from using moral suasion or lawful argument, to induce any one not to work on and about any mine.

SEC. 15. Whenever by reason of any explosion or other accidents in any coal mine, or the machinery connected therewith, loss of life or serious personal injury shall occur, it shall be the duty of

the superintendent of the colliery, and in his absence the mining boss in charge of the mine, to give notice thereof forthwith, by mail or otherwise to the inspector of the district, stating the particulars of such accident. And if any one is killed thereby, to the coroner of the county also, or in his absence or inability to act, to any justice of the peace; and the said inspector shall, if he deem it necessary from the facts reported, immediately go to the scene of such accident and make such suggestions and render such assistance as he may deem necessary for the future safety of the men; and investigate the cause of such explosion or accident and make a record thereof, which he shall preserve with the other records of his office; and to enable him to make such investigation, he shall have the power to compel the attendance of witnesses, and to administer oaths and affirmations; and the costs of such investigation shall be paid by the county in which such accident occurred, in the same manner as the costs of coroner's inquests are now paid. If the coroner or justice shall determine to hold an inquest upon the body of any person killed, as aforesaid, he shall impanel a jury, no one of whom shall be directly or indirectly interested and the inspector of mines, if present at such inquests, shall have the right to appear and testify and to offer testimony that may be relevant, and to question and cross-question any witness, and the coroner or justice shall deliver to the inspector a copy of the testimony and verdict of the jury.

SEC. 16. The operator or agent of every coal mine shall annually, during the month of July, mail or deliver to the inspector of his district, a report for the preceding twelve months, ending with the thirtieth day of June. Such report shall state the names of the operators and officers of the mine, the quantity of coal mined, and such other information, not of a private nature, as may from time to time be required by the inspector. Blank forms for such reports shall be furnished by the inspector.

SEC. 17. The operator or agent of any coal mine, who shall willfully neglect or refuse to perform the duties required of him by any section of this act, or who shall violate any of the provisions hereof, and any person who shall neglect or refuse to perform the duties required of him by sections nine, ten, eleven, thirteen or fourteen, or who shall violate any of the provisions thereof, or knowingly do any act whereby the health or life of any person employed in a mine, or the security of a mine is endangered, shall be guilty of a misdemeanor, and upon conviction, shall be punished by a fine of not less than fifty dollars nor more than five hundred dollars; in default of payment of such fine and costs for the space of ten days, the defendant may in the discretion of the court, be imprisoned in the county jail for a period not exceeding three months.

SEC. 18. The provisions of this act shall apply only to coal mines in which ten or more persons are employed in a period of twenty-four hours.

APPENDIX (CHAPTER 11, ACTS OF 1887, AS AMENDED).—*Employment of children.*

(Page 998.)

SEC. 1. That no minor under twelve years of age shall be employed in any mine or in any factory, workshop, manufactory or establishment where goods or wares are manufactured; and in all cases of minors applying for work, it shall be the duty of the manager, superintendent, foreman or operator, to see that the provisions of this section are complied with.

SEC. 2. Any manager, superintendent, foreman, or operator of such mine, factory, workshop, manufactory, or establishment, and parents or guardians, allowing a child under twelve years of age, to work in violation of section first of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be fined not less than ten dollars nor more than twenty dollars for each and every such offense.

APPENDIX.—*Weighing coal at mines.\**

(Page 998.)

SEC. 1. It shall be the duty of every corporation, company or person, engaged in the business of mining and selling coal by weight or measure, to procure and constantly keep on hand at the proper place, the necessary scales and measures and whatever else may be necessary, to correctly weigh and measure the coal as mined by such corporation, company or person. And it shall be the duty of the sealer of weights and measures for every county in which coal is so mined and sold, to visit each coal mine operated therein, and where such scales and measures are kept at least once in each year, and test the correctness of such scales and measures. The owner or operator of such coal mine, or any two or more of the miners working therein, may in writing require his attendance at the place where such scales and measures are kept, at other times, in order to test the correctness thereof, and it shall be his duty to comply with such requests as soon as he can, after receiving such request. If his attendance is required by the owner or operator of such mine, or if by the miners working therein, and the scales or measures tested be found not to be correct, his fee shall be paid by the owner or operator, and if his attendance be required by the miners and the scales or measures tested be found to be correct, his fees shall be paid by them. If in any such county there be no sealer of weights and measures, the duties herein required to be done and performed by such sealer, shall be done and performed by the inspector of mines for the district of which such county forms a part.

SEC. 2. Each car used by any such corporation, company or per-

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\*See Decisions, page 415.

son in removing coal from any coal mine, shall be numbered by consecutive numbers plainly marked, and placed and kept thereon as long as such car is so used. And if the coal from such mine is mined, and the miners are paid according to the weight thereof for mining the same, every such car so used shall be weighed upon such tested scales, and the weight thereof shall be plainly marked and placed thereon as long as such car shall be used as aforesaid.

If the coal at any such mine is mined, and the miners thereof are paid for mining the same by measure, the number of bushels of coal such car will hold when loaded to its capacity, shall also be plainly marked, and placed and kept thereon as long as such car is so used as aforesaid, and no car shall be used for the purpose aforesaid after ninety days from the time this act takes effect, until the provisions of this section are complied with.

SEC. 8. All coal so mined and paid for by weight, shall be weighed in the car in which it is removed from the mine before it is screened, and shall be paid for according to the weight so ascertained, at such price per ton as may be agreed on by such owner or operator and the miners who mined the same. And coal mined and paid for by measure shall be paid for according to the number of bushels marked upon each car in which it is removed from the mine, and before it is screened, and the price paid for each bushel so ascertained shall be such as may be agreed on as aforesaid.

SEC. 4. Every such corporation, company or person shall employ a weighman, and the miners working in any such coal mine may employ another such weighman, and the two so employed shall supervise the weighing of each car while empty, and the weighing of the same when loaded with coal so paid for by weight, and the measuring of the number of bushels therein, when necessary, so paid for by measure. But if the miners fail to employ such weighman, then the person so employed by such corporation, company or person shall perform that duty. Each of the persons so employed before entering upon the discharge of the duties of his employment shall take and subscribe an oath or affirmation that he will honestly and impartially do and perform the duties of his employment, and do equal and exact justice between employers and employees interested in the matter of his employment, to the best of his judgment, skill and ability.

SEC. 5. In any county in which the mine inspector is required to act as herein mentioned, the county court of such county shall furnish him with whatever is necessary to enable him to discharge his duties, if such court has procured the weights and measures and balances provided for by chapter fifty-nine of the Code of West Virginia; and if not, the state sealer of weights and measures shall furnish him with whatever may be necessary to enable him to discharge the duties hereby required of him, and the things so furnished him, in either case, shall be returned by him to the person from whom he received them as soon as possible

after he has performed the duties for which he received them. But it shall be the duty of every corporation, company or person so engaged in the business of mining coal, to procure and constantly keep on hands a sealed weight, of at least fifty pounds, and a sealed measure of at least one bushel, to be used for the purposes of this act.

SEC. 6. Any corporation, company or person violating any of the provisions of this act, shall be guilty of a misdemeanor, and upon conviction thereof, shall for each offense, be fined not less than twenty-five dollars and not more than five hundred dollars. And the officer, agent or employee of the corporation or company whose duty it was to do or perform the act, or to cause it to be done and performed, which is the subject of the indictment, may be indicted jointly, with said corporation or company, and upon conviction thereof, in the discretion of the court, he may be imprisoned in the county jail not less than ten nor more than sixty days.

SEC. 7. This act shall not apply to any corporation, company or person owning or operating a coal mine in which less than ten miners are employed.

SEC. 8. It shall be the duty of every court in each county in which any such coal mine is operated, and in which a grand jury is impaneled, to give this act in charge to the grand jury.

#### APPENDIX (CHAPTER 15, ACTS OF 1889).—*Bureau of labor.*

(Page 1001.)

SEC. 1. There \* \* \* is hereby created a State bureau of labor, to be under the control and management of a commissioner to be known as the State commissioner of labor, who is to be appointed as hereinafter provided.

SEC. 2. The governor shall, with the advice and consent of the senate, appoint a competent person, who is identified with the labor interests of the State, to be state commissioner of labor. \* \* \*

SEC. 4. It shall be the duty of the commissioner of labor to collect, compile and present to the governor in annual report, statistical details relating to all departments of labor and the industrial interests of the State, especially in relation to the financial, social, educational and sanitary condition of the laboring classes, and all statistical information that may tend to increase the prosperity of the productive industries of the State. He shall, once at least in each year, visit and inspect the principal factories and workshops of the State; and shall, upon complaint and request of any three or more reputable citizens, visit and inspect any place where labor is employed and make true report of the result of his inspection.

SEC. 5. The commissioner of labor shall have power, in the discharge of his duties, to enter and inspect any public institution of the State and any factory, workshop or other place where labor is

employed. He may furnish a written or printed list of interrogatories, asking information essential to a proper discharge of his duties, to any person, company or corporation employing labor, and require full and complete answers thereto. And if any person, or the officers of any company or corporation shall neglect or refuse to answer, within a reasonable time, any proper question propounded to him by the commissioner of labor; or if any person or the officers of any company or corporation to whom a list of interrogatories has been furnished, shall neglect or refuse to fully and truthfully answer and return the same, such person or such officer of such company or corporation shall be deemed guilty of a misdemeanor. The commissioner of labor shall report to the prosecuting attorney of the proper county all such violations of this act; whereupon said prosecuting attorney shall proceed against the persons guilty thereof, as in other cases of misdemeanor; and any person or any officer or any company or corporation, convicted in such proceedings shall be fined not less than ten dollars nor more than fifty dollars, or shall be confined in the county jail not less than ten nor more than ninety days, or shall be both fined and imprisoned within the above limits.

SEC. 6. All state, county, district and city officers shall furnish the commissioner of labor, upon his request, all statistical information relating to labor, which may be in their possession as such officers. The commissioner of labor shall report to the governor, on or before the first day of December in each year, all the statistics he has collected and compiled, with such suggestions as he may deem advisable as to legislation tending to promote and increase the prosperity of the industrial establishments of the State, and to protect the lives and health and to promote the prosperity of the persons employed therein.

#### APPENDIX.—*Payment of Wages.\**

(Page 1002.)

SEC. 1. It shall be unlawful for any corporation, company, firm or person, engaged in any trade or business, either directly or indirectly, to issue, sell, give or deliver, to any person employed by such corporation, company, firm or person, in payment of wages due such laborer, or as advances for labor not due, any scrip, token, draft, check, or other evidence of indebtedness, payable or redeemable otherwise than in lawful money; and if any such scrip, token, draft, check or other evidence of indebtedness, be so issued, sold, given or delivered to such laborer, it shall be construed, taken and held in all courts and places, to be a promise to pay the sum specified therein in lawful money by the corporation, company, firm or person, issuing, selling, giving or delivering the same to the person named therein, or to the holder thereof. And the corporation, company, firm or person so issuing, selling, giving or delivering the same, shall, moreover, be guilty of a misde-

meanor, and, upon conviction thereof, shall be fined not less than twenty-five dollars, nor more than one hundred dollars, and, at the discretion of the court, the officer or agent of the corporation, company, firm, or the person issuing, selling, giving or delivering the same, may be imprisoned not less than ten, nor more than thirty days.

SEC. 2. If any corporation, company, firm or person, shall coerce or compel, or attempt to coerce or compel an employee in its, their or his employment, to purchase goods or supplies in payment of wages due him, or to become due him, or otherwise, from any corporation, company, firm or person, such first named corporation, company, firm or person shall be guilty of a misdemeanor, and upon conviction thereof shall be punished as provided in the preceding section. And if any such corporation, company, firm or person, shall directly or indirectly, sell to any such employee in payment of wages due or to become due him, or otherwise, goods or supplies at prices higher than the reasonable or current market value thereof at cash, such corporation, company, firm or person, shall be liable to such employee, in a civil action, in double the amount of the charges made and paid for such goods or supplies, in excess of the reasonable or correct value in cash, thereof.

SEC. 3. It shall be the duty of every court having jurisdiction in criminal cases in which grand juries are impaneled, to give this act in charge to the grand juries.

#### APPENDIX.—*Payment of Wages.\**

(Page 1003.)

SEC. 1. That all persons, firms, corporations, or associations, in this State, engaged in mining coal, ore or other minerals, or mining and manufacturing them, or either of them, or manufacturing iron or steel, or both, or any other kind of manufacturing, shall pay their employees as provided in this act.

SEC. 2. All persons, firms, companies, corporations or associations, engaged in the business aforesaid, shall settle with their employees at least once in every two weeks unless otherwise provided by special agreement, and pay them the amount due them for their work or services in lawful money of the United States, or by the cash order as described and required in the next succeeding section of this act. *Provided*, That nothing herein contained shall affect the right of an employee to assign the whole or any part of his claim against his employer.

SEC. 3. It shall not be lawful for any person, firm, company, corporation or association, engaged in the business aforesaid, their clerk, agent, officer or servant, in this State, to issue for the payment of labor, any order or other paper whatsoever, unless the same purports to be redeemable for its face value, in lawful money

\*See Decisions, page 417.

of the United States, bearing interest at the legal rate, made payable to employee or bearer and redeemable within a period of thirty days by the person, firm, company, corporation or association, giving, making, or issuing the same. And any person, firm, company, corporation or association engaged in business aforesaid, their clerk, agent, officer or servant, who shall issue for payment of labor any paper or order other than the one herein specified, in violation hereof, shall be guilty of a misdemeanor, and upon conviction thereof, shall be fined in any sum not less than twenty-five dollars nor exceeding one hundred dollars, in the discretion of the court.

SEC. 4. \* \* \* It shall be unlawful for any person, firm, company, corporation or association engaged in mining or manufacturing, either or both as aforesaid, and who shall likewise be interested directly or indirectly in merchandising as owner or otherwise in any money, per cent. profit or commission arising from the sale of any such merchandise, their clerks, servants, officers or agents, to knowingly and willfully sell or cause to be sold to any employee, any goods, merchandise or supplies whatsoever, for a greater per cent. of profit than merchandise and supplies of like character, kind, quality and quantity are so sold to other customers buying for cash, and not employed by them; and shall any person or member of any firm, company, corporation or association, his or their clerk, agent, or servant, violate this section then and in that case such person, firm, company, corporation or association shall collect for such merchandise and supplies only the price for which like merchandise and supplies are sold by them to such other customers as aforesaid buying for cash; and moreover shall be guilty of a misdemeanor, and on conviction thereof shall be fined not exceeding one hundred dollars nor less than twenty-five dollars.

SEC. 5. That if any firm, company, corporation or association shall refuse for the space of twenty days to settle and pay any of their said employees at the intervals of time as provided in section two of this act, or shall neglect or refuse to redeem any cash orders herein provided for, within the time specified, if presented, and suit should be brought for the amount overdue and unpaid, judgment for the amount of said claim proven to be due and unpaid, with legal interest thereon until paid, shall be rendered in favor of the plaintiff in such action; *Provided, further,* That the cash order herein provided for, given for payment of labor, if the laborer continues to hold the same, in case of the insolvency of the company, or person, or firm, or corporation giving the same, such laborer shall not lose his lien and preference under existing laws.



## ACTS OF 1893.

CHAPTER 42.—*Employment of nonresidents for police duty prohibited.*

SEC. 1. It shall be unlawful for any officer in this State to knowingly engage or employ any person not a *bone* [*bona*] *fide* resident of the State of West Virginia, at the time of such employment, to do or perform police duty of any sort therein, or in any way to aid or assist in the execution of the laws of this State.

SEC. 2. It shall be unlawful for any corporation, company, firm or persons, under any circumstances, to knowingly engage or employ any person not a *bona fide* resident of this State, at the time of such employment, to do or perform police duty of any sort therein, or in any way to aid or assist in the execution of the laws of this State.

SEC. 3. It shall be unlawful for any person, not a *bona fide* resident of this State, as aforesaid, to do or perform, or to attempt to do or perform, any sort of police duty in this State, or, in any way, to aid or assist, or attempt to aid or assist, in the execution of the laws thereof. Any officer, corporation, company, firm or person, violating any of the provisions of this, or either of the two preceding sections, shall be guilty of a misdemeanor, and upon conviction thereof, be fined not less than five hundred nor more than five thousand dollars, and may at the discretion of the court be imprisoned in the county jail of the county in which the offense is committed not exceeding twelve months.

SEC. 4. All persons violating any of the provisions of sections two and three of this act shall be taken and deemed to be rioters, and shall be proceeded against in all respects as such, as provided in chapter one hundred and forty-eight of the Code of West Virginia. And all the provisions of sections one, two, three, four, five and six of said chapter, shall be applicable to said proceedings. If any person be killed by one or more rioters engaged with him at the time of such riot, such rioter or rioters shall be guilty of murder and punished as provided by law in other cases of murder: *Provided*, That nothing in this act contained shall be so construed as to interfere with the right and duty of the governor to call upon the President of the United States for aid in the enforcement of the laws, in cases provided for in the constitution.

CHAPTER 46.—*Convict labor.*

SEC. 28. In order to provide for hard labor by each convict according to his sentence, the directors of the penitentiary are hereby authorized and required to let and hire the labor of the convicts upon such branches of business, and for the manufacturing of such articles, as in their judgment will best accomplish the ends and subserve the interests of the State, which letting and hiring shall

be as follows: Such letting and hiring shall be advertised by the warden of the penitentiary, in two newspapers published in the State, for four weeks, and in such other manner as may be directed by the board of directors; the advertisement to specify the number of men to be let, the length of time, which shall not exceed five years, and the last day, at twelve o'clock, meridian, on which bids will be received.

SEC. 29. The board may, in their discretion, designate what articles or class of articles shall be manufactured.

SEC. 30. Each bidder may separately state in his bid what he will give for the labor bid for, with or without the exclusive right to manufacture the articles specified.

SEC. 31. Each bid shall specify the articles proposed to be manufactured and the number of square feet of shop room which will be required, and if steam power is required, the amount of power and the price per day they are willing to pay therefor, and shall be unconditional.

SEC. 32. The price per day for each convict shall be specified, and if a different price per day is stated for different periods, each period and price must be so stated, that one may be accepted and the other rejected.

SEC. 33. If the person bidding desires to manufacture different classes of articles, the labor to be employed on each class must be bid for separately.

SEC. 34. Each bid must be accompanied with a bond, with sureties to the satisfaction of the board, that the bidder will comply with the terms of his bid if it is accepted, and be sealed up and addressed to the warden, indorsed "bid for labor."

SEC. 35. The bids shall be opened by the board at their next monthly meeting after the last day and hour specified for receiving bids, and the labor shall be awarded to the highest bidder, subject to the following regulations: (a) As between bids which are for substantially the same price, the board may, in its discretion, give preference to the one which, in their judgment, best promotes the interests of the State. (b) As between the bids of the same party, one with and the other without the exclusive right to manufacture, the board may accept either. (c) The board may reject all bids, if they are for less than a fair and reasonable price for the labor bid for, and the board shall not be required in any case to apportion the labor advertised among the bidders, or any number of them. (d) Any bid may be rejected, if it is against the interest of the State, or the welfare of the convict, that the articles should be manufactured.

SEC. 36. When a bid is accepted and labor awarded to a bidder, the directors, on the part of the State, and the bidder shall enter into a contract in pursuance of the bid, and such bidder shall produce a bond to be executed to the satisfaction of the board, conditioned for the faithful performance of such contract on his part, a blank form of which contract and bond shall be deposited and re-

main with the clerk for inspection during the time of the advertisement; and said directors may alter, or modify, or discontinue, with the consent of the other contracting party, any contract made by them for the hiring or letting of convicts under this chapter.

SEC. 37. The board may give to a bidder, after he shall have entered into a contract, a reasonable time to procure machinery and make preparations for manufacturing, not exceeding sixty days from the acceptance of the bid.

SEC. 38. If a contract be made for the exclusive right of manufacturing the articles therein named, all contracts made subsequently by the same party, and within the period, and for the manufacture of the same articles, or any of them, shall terminate at the same time with the first contract.

SEC. 39. If any contractor shall not manufacture one or more articles specified in his contract, the board may give him two months' notice to manufacture them, and on failure of the contractor to do so within that period, the right to manufacture shall terminate.

SEC. 40. The contractor shall furnish all machinery, belting and tools used, except shafting and pulleys. The State will furnish no machinery or tools other than the steam power required to run the machinery put in by contractors, and all attachments to said power must be at the contractors' cost.

SEC. 41. The convicts shall labor for the contractors not to exceed nine hours a day during the year, Sundays and national holidays excepted.

SEC. 42. On or before the fifth week day of each month, the clerk shall make out, and the warden certify and deliver to the treasurer of the board, a statement of the amount due from each contractor for the preceding month, and within five days thereafter each contractor shall pay the amount due to said treasurer: *Provided*, A credit of three months, at the discretion of the board, be allowed to the several contractors; *And provided, further*, That within and before the tenth day of December, in each year, payment in full for the previous year to the first day of the month shall be made.

SEC. 43. It shall be the duty of the board to keep as many convicts employed on contracts as the interests of the State will permit, and all convicts not employed on contracts may be employed by the warden, under the direction of the board, in the performance of the work for the State or temporarily hired, which hiring shall terminate whenever their labor is required on any contract.

SEC. 44. The warden, under the direction of the board, may employ a portion of the convicts in the manufacture and repair of articles used by the State in carrying on the penitentiary, or articles used by any of the other state institutions, and if in the opinion of the board of directors it is deemed advisable to do so, any convicts not employed under contract may be employed or let to contract, in the manner hereinbefore specified, on the piece

price system, or employed in manufacturing for the State such articles as may be selected by the board.

SEC. 45. A sufficient number of convicts may be hired by the warden for domestics, on terms to be agreed upon between him and the board of directors.

SEC. 46. No officer or employee shall receive, directly or indirectly, any other compensation for his services than that provided by law, or by the board before his appointment, nor shall he receive any compensation whatever, directly or indirectly, for any act or service which he may do or perform for or on behalf of any contractor, or agent or employee of a contractor. For every violation of this section the officer, agent or employee of the State engaged therein, shall be dismissed from his office or service, and every contractor, or employee or agent of a contractor engaged therein, shall be expelled from the penitentiary, and not again employed in it as a contractor, agent or employee.

SEC. 47. No officer or employee of the State, or contractor, or employee of a contractor, shall make any gift or present to a convict, or receive any from a convict, or have any barter or dealings with a convict; and for every violation of this section the party engaged therein shall incur the same penalty as is prescribed in the preceding section.

SEC. 48. No person shall be appointed to any office or be employed in the penitentiary on behalf of the State who is a contractor, or agent or employee of a contractor, or who is interested directly or indirectly in any business carried on therein, and should any officer or employee become such contractor, his agent or employee, or interested in such business it shall be cause for his removal. And no person who is not a citizen of this State shall be appointed a guard or superintendent of any state work, nor shall any person be appointed to office or employment by virtue of this act who is in the habit of using intoxicating liquors, and a single act of intoxication shall justify a removal or discharge.

SEC. 49. All revenues, except herein otherwise provided, shall be paid to the warden and account thereof be kept by him, and reported to the board of directors monthly.

SEC. 50. That the board of public works is authorized to furnish to any county in this State, to work on public roads, free of hire, as many able-bodied male convicts from the penitentiary, as may now or hereafter be there, as can be spared without interfering with contracts heretofore made: *Provided*, That when said convicts are furnished to a county to work on public roads, the expense of guarding, boarding and medical attendance upon said convicts shall be paid by such county. Upon furnishing convicts to any county, as aforesaid, the said board of public works shall at the same time appoint a superintendent of the guard, and such other guards as may be necessary, who shall be under the charge of the said superintendent. He shall see that the said convicts are properly fed, clothed, guarded and have proper medical at-

tendance, and shall report to the warden of the penitentiary once a month the condition and treatment of said convicts. The compensation of the guard shall be agreed upon between the board of public works and the county court to which the convicts are furnished.

SEC. 51. The warden of the penitentiary shall provide convicts furnished under this chapter with all necessary clothing of the same character as that furnished to other convicts. The superintendent of the guard shall make requisition for all clothing and distribute the clothing to the convicts.

SEC. 52. Upon proof that convicts are improperly fed or cruelly treated, the board of public works may order them to be returned to the penitentiary forthwith.

SEC. 53. The superintendent of the guards and other guards appointed by the board of public works shall take the oath required of other officers of the State, and may be required to give bond for the faithful performance of thier duties in such penalty as the board may deem proper.

SEC. 54. Any county court desiring to obtain convicts from the penitentiary, to work upon the public roads within said county, shall make application to the board of public works therefor, stating in the application the number of convicts desired and the length of time the said court will probably employ said convicts in said county. The application shall be filed with the secretary of state, who shall indorse thereon the date of its receipt. The board shall consider all applications in the order in which they are received, and shall furnish the convicts applied for to the county first applying for them, if the court thereof shall enter into a proper contract for the payment of guards hereinbefore mentioned.

## ACTS OF 1897.

### CHAPTER 47.— *Attachments against wages.*

It shall be unlawful for any person to institute, or permit to be instituted, proceedings in his own name, or in the name of any other person, or to assign or transfer, either for or without value, any claim for debt, or liability of any kind, held by him against a resident of this State, for the purpose of having payment of the same, or any part thereof, enforced out of the wages that may be exempted by sections twenty-three, twenty-four, twenty-five, twenty-six and twenty-seven of chapter forty-one of the Code of West Virginia by proceedings in attachment or garnishment, in courts, or before justices of the peace, in any other State than in the State of West Virginia; or to send out of this State by assignment, transfer, or in any other manner whatsoever, either for or without value, any claim or debt against any resident thereof, for the purpose or with the intent of depriving such person of the right to have his wages exempt from distress levy, or garnish-

ment, according to the provisions of sections twenty-three, twenty-four, twenty-five, twenty-six and twenty-seven of chapter forty-one of the Code of West Virginia. And the person instituting such suit, or permitting such suit to be instituted or sending, or assinging, or transferring any such claim or debt for the purpose, or with the intent aforesaid, shall be liable in an action of debt to the person from whom payment of the same or any part thereof shall have been enforced by attachment or garnishment, or otherwise, elsewhere than in the State of West Virginia, for the full amount, payment whereof shall have been so enforced, together with interest thereon, and the cost of attachment or garnishee proceedings, as well as the costs of said action to recover the same.

3. The fact that the payment of a claim or debt against any person entitled to the exemption provided for by sections twenty-three, twenty-four, twenty-five, twenty-six and twenty-seven of chapter forty-one of the code has been enforced by legal proceedings in some State other than the State of West Virginia, in such manner as to deprive such persons to any extent of the benefit of such exemption, shall be *prima facie* evidence that any resident of this State who may at any time have been owner or holder of such claim or debt has violated this law.

### DECISIONS OF THE COURTS.

CODE, EDITION OF 1891, APPENDIX, PAGE 991.—*Coal mine regulations and inspection.\**

It is the duty of the operator of every coal mine, under this act, to provide ample means of ventilation, and to cause air to circulate through the headings and working places, so as to dilute, render harmless and carry off dangerous and noxious gases. It is also his duty to employ a competent fire boss to examine with safety lamp, immediately before each shift, working places and other places where dangerous and noxious gas is known to exist or is liable to exist. It is also his duty to employ a competent mining boss to keep careful watch over the ventilating apparatus and the airways, traveling ways, pumps and drainage, and to see that proper break-throughs are made, and that all loose coal, slate or rock overhead in the working places and along the haulways be removed or carefully secured, so as to prevent danger to persons employed in the mine, and to provide props and timbers for the mine, and perform other duties required of him by law. Omission of these duties is negligence in the operator, and renders him liable to his employee for injury resulting from such omission of duty. (Supreme Court of Appeals, 1893, *Graham v. Newburg Orrel Coal and Coke Company*, 38 West Va., 273.)

\*See Law, page 401.

CODE, EDITION 1891, APPENDIX, PAGE 998.— *Weighing coal at mines.\**

It was claimed that these acts were violative of sections 1 and 10 of the bill of rights of the State in that they deprive persons of property without due process of law, and also that they were in conflict with the fourteenth amendment to the constitution of the United States, in that they abridge the privileges and immunities of the citizens of the United States, that they deny to the plaintiff the equal protection of the laws, and that they deprive the defendants of their property without due process of law. *Held*, that, as applied to corporations and licensees, neither of these acts is in violation of the constitution of the State nor of that of the United States, but that both acts are within the scope of legislative authority. In its opinion, the court held in part as follows:

"In the further discussion of the questions involved, another principle may be referred to, which is of almost universal application, and that is, where peculiar privileges are granted by the State, peculiar responsibilities supervene, and special regulations may be imposed. The bestowal and reception of unequal privileges beget legitimately the right to impose unequal burdens. Corporations are the recipients of extraordinary privileges from this State. In no State in the Union have they such an extensive endowment of special privileges as in our own State. It would naturally be supposed, therefore, that a State in which there is so much lavishness of bounty in conferring privileges upon corporations, should reserve to herself the power to regulate, alter, or repeal charters and to exercise expansive and remedial police powers necessary to prevent abuse. If persons engaged in extensive industries, such as in this case—coal mining—desire to retain every privilege which pertains to ordinary private property, they should be careful not to apply to the sovereign power for those extraordinary privileges which attach to a charter of incorporation in this State. It is further found that under our code, every corporation chartered under the laws in this State, is required to take out a State license before doing or attempting any business in this State. The defendant is therefore not only a corporation, but a licensee.

Such a license is granted and required as a police regulation. While our code is liberal in conferring extraordinary powers upon corporations, it has yet reserved to the legislature the power of altering and amending all charters of incorporation. Can licensees of this State invoke the protection of sections 1 and 10 of the bill of rights and claim immunity from the payment of license fees and other appropriate police regulations? It has been held by all the better authorities that they can not, and for two reasons: First, because they are in the enjoyment of a peculiar privilege derived from the State, which makes their business essentially a monopoly; and, second, because they are engaged in a vocation

\*See LAW, page 407.

peculiarly the subject of public surveillance. Upon the whole, therefore, we are not able to say that the legislature has transcended its inherent power to make reasonable police regulations, or that it has violated the constitution of this State. First, upon the ground that the defendant is a corporation in the enjoyment of unusual and extraordinary privileges, which enable it and similar associations to surround themselves with a vast retinue of laborers, who need to be protected against all fraudulent or suspicious devices in the weighing of coal or in the payment of labor; second, the defendant is a licensee, pursuing a vocation which the State has taken under its general supervision for the purpose of securing the safety of employees, by ventilation, inspection and governmental report, and the defendant, therefore, must submit to such regulations as the sovereign thinks conducive to public health, public morals or public security.

"We do not base this decision so much upon the ground that the business is affected by the public use, but upon the still higher ground, that the public tranquility and the good and safety of society demand, where the number of employees is such that specific contracts with each laborer would be improbable, if not impossible, that in general contracts justice shall prevail as between operator and miner; and, in the company's dealing with the multitude of laborers, with whom the State has by special legislation enabled the owners and operators to surround themselves, that all opportunities for fraud shall be removed. The State is frequently called upon to suppress strikes, to discountenance labor conspiracies, to denounce boycotting as injurious to trade and commerce and it can not be possible that the same police power may not be invoked to protect the laborer from being made the victim of the compulsory power of that artificial combination of capital which special State legislation has originated and rendered possible. It is a fact worthy of consideration, and one of such historical notoriety that the court may recognize it judicially, that every disturbance of the peace of any magnitude in this State since the civil war has been envolved from the disturbed relations between powerful corporations and their servants or employees. It can not be possible that the State has no police power adequate to the protection of society against the recurrence of such disturbances, which threaten to shake civil order to its foundations. It has been held that it was not unconstitutional, as a police regulation, to require railroads to fence their tracks, although others may not be required to inclose their lands; and also that a law requiring such corporations to pay for live stock killed on the track is not an unwarranted exercise of police power.

"If such legislation, directed against one class of corporations only, is not objectionable as class legislation, it is difficult to see why laws directed against other corporations, and directly intended to prevent popular disturbance and discontent, by regulating the manner of weighing coal, and prohibiting what is popularly known



as the 'pluck me' method of payment, should not be deemed a legitimate exercise of the police power of the State. Section 3 of chapter 63 of the acts of 1887, on the payment of wages, was declared unconstitutional in the case of *State v. Goodwill* (33 W. Va., 179), on the ground that the invidious distinction, contained therein, separating miners and manufacturers from the rest of the community, and imposing upon them burdens not inflicted upon others, made the legislation embraced therein distinctly class legislation. In the act we are now considering (chapter 76, acts of 1891) this objection is carefully and entirely removed. It seems clear that both the acts we are now considering were passed with a view of cutting off opportunities for fraud, and therefore they were fairly within the police power of the legislature. It is maintained, however, that these acts are in conflict with the fourteenth amendment of the constitution of the United States. In the celebrated *Slaughterhouse Case* it was held that it was only the privileges and immunities of the citizens of the United States which are placed by this clause under the protection of the Federal constitution, and that those of the citizens of the State, whatever they may be, are not intended to have any additional protection by this paragraph of the amendment. The fourteenth amendment was never intended to strike down the police power of the State, nor to control its exercise, except in cases where the act amounts plainly to usurpation, and the wresting of private property from its legitimate owners without compensation. We see nothing in the legislation now under consideration which could properly be so characterized or regarded as in conflict with the fourteenth amendment. So well am I satisfied that these laws are not only constitutional but also reasonable and just, that, so far as I am individually concerned, I do not question that they can be successfully maintained against all classes of persons embraced in their scope. But this court is neither in duty bound nor ought it to decide in advance upon the guilt or innocence of persons not now before us, but who may probably come before us on some future indictment. Should individual operators hereafter be indicted, the question as to the advisability of the acts—whether they may be maintained as against licensees and corporation, but not as against individuals—will properly arise." (Supreme Court of Appeals, 1892, *State v. Peel Splint Coal Company*, 36 W. Va., 802.)

CODE, EDITION OF 1891, APPENDIX, PAGE 1002.—*Payment of wages*.\*

[See case of *State v. Peel Splint Coal Company*, pages 1338-1340, ante.]

CODE, EDITION OF 1891, APPENDIX, PAGE 1003.—*Payment of wages.\**

It is not competent for the legislature, under the constitution, to single out owners and operators of mines and manufacturers of every kind, and provide that they shall bear burdens not imposed on other owners of property or employers of labor, and prohibit them from making contracts which it is competent for other owners of property or employers of labor to make. Such legislation can not be sustained as an exercise of the police power. The third section of this chapter, which prohibits persons engaged in mining and manufacturing from issuing for the payment of labor any order or paper, except such as is specified in the said act, is unconstitutional and void. (Supreme Court of Appeals, 1889, *State v. Goodwill*, 33 W. Va., 179).

The fourth section of this chapter, which prohibits persons and corporations, engaged in mining and manufacturing and interested in selling merchandise and supplies, from selling merchandise and supplies to their employees at a greater per cent. of profit than they sell to others not employed by them, is unconstitutional and void, because it is class legislation and an unjust interference with private contracts and business. (Supreme Court of Appeals, 1889, *State v. F. C. Coal and Coke Company*, 33 W. Va., 188.)

\*See Law, page 409.

## EMPLOYER AND EMPLOYEE UNDER THE COMMON LAW.

(*From Report, U. S. Department of Labor.*)

The relations existing between employers of labor and their employees, and the reciprocal duties, obligations, and rights growing out of those relations, are, in the absence of legislative enactments, governed by the common law in regard to master and servant, the words "master" and "servant" being legally synonymous with the words "employer" and "employee."

The common law consists of principles, usages, and rules of action, applicable to the government and security of persons and property, which have grown into use by gradual adoption, without legislative authority, and have received, from time to time, the sanction of the courts of justice.

The great body of the common law of the United States consists of the common law of England, and such statutes thereof as were in force prior to the separation of this country from England, and applicable to circumstances and conditions prevailing here. These laws have been adopted as the basis of our jurisprudence in all the States except Louisiana, and many of the most valued principles of the English common law have been embodied in the constitutions of the United States and the several States.

In many details, however, the common law of the United States now differs widely from that of England by reason of modifications arising from different conditions and established by American adjudications. That branch of the common law governing the relation of master and servant has undergone some changes, although in the main it is the same in this country as in England. It is not the purpose of this article to point out such changes or differences, but to state the principles and rules of the common law now prevailing throughout the United States, except where they have been changed or modified by legislative enactments.

The statement which follows is derived from articles in the American and English Encyclopedia of Law on the subject of "Master and Servant" and kindred topics, and from standard legal works treating of the subject under consideration. The reader should bear in mind that any rule or principle of the common law, as given in this statement, conflicting with a statute which has not been declared invalid or unconstitutional by the courts, is modified or changed by the statute, and that the statute instead of the common law now governs.

**MASTER AND SERVANT: DEFINITIONS.**—A master is variously defined as one who has in his employment one or more persons hired by contract to serve him either as domestic or common laborers; one who has the superior choice, control, and direction, whose will is represented not merely in the ultimate result of the work in

hand, but in all its details; one who is the responsible head of a given industry; one who not only prescribes the end, but directs, or may at any time direct the means and methods of doing the work; one who has the power to discharge; a head or chief; an employer; a director; a governor.

A servant is one who is employed to render personal service to his employer otherwise than in the pursuit of an independent calling, and who, in such service, remains entirely under the control and direction of the latter.

**THE RELATION: ITS CREATION AND EXISTENCE.**—The relation of master and servant is created by contract, either express or implied, where both parties have the requisite legal qualifications for entering into a valid contract. The relation exists only where the person sought to be charged as master employs and controls the other party to the contract of service, or expressly or tacitly assents to the rendition of the particular service by him. The master must have the right to direct the action of the servant, and to accept or reject his service. The relation does not cease so long as the master retains his control or right of control over the methods and manner of doing the work, or the agencies by which it is effected. Furthermore, the relation exists where the servant is employed, not by the master directly, but by an employee in charge of a part of the master's business with authority to engage assistance therein.

**THE CONTRACT OF SERVICE.**—A contract of employment is one by which an employer engages an employee to do something for the benefit of the employer, or of a third person, for a sufficient consideration, expressed or implied. The authority of a subordinate to employ an agent or servant includes, in the absence of restrictive words, authority to make a complete contract, definite as to the amount of wages, as well as to all other terms.

Ordinarily, when an adult person solicits employment in a particular line of work, the solicitation carries with it an implied assertion that the one seeking employment is competent to perform the ordinary duties of the position sought; and it is an implied condition of every contract of service that the employee is competent to discharge the duties of his employment.

A servant is presumed to have been hired for such length of time as the parties adopt for the estimation of wages; for example, a hiring at a yearly rate is presumed to be for one year; at a daily rate, for one day; a hiring by piecework, for no specified time; but such fact does not, in the absence of other evidence, necessarily fix the period of hiring. Where an employee has been hired to work by the week or month, the burden of proof is upon him to show any change in the contract of employment as to the term of service.

It is a general rule that where a person enters into a contract of service for a fixed compensation, he, *prima facie*, agrees to give his employer his entire time; but this rule is not inflexible.

A contract for service running for a longer period of time than one year, to be valid, must be in writing and signed by the party against whom it may be sought to be enforced, or by his authorized agent.

In the absence of an express contract of hiring, a person may recover compensation for services where the same were rendered under such circumstances as to show that he expected such compensation as a matter of right, and that the person for whom they were rendered was bound to know that he claimed compensation, or was legally entitled thereto. Where one person performs labor for another, a request and a promise to pay the reasonable worth of such labor are presumed by law, unless it is understood that the labor is to be gratuitously performed, or it is performed under such circumstances as to repel the presumption of a promise to pay.

Where there is an express contract the servant must be furnished with employment by the master during the period covered by its terms. If by the terms of the contract the servant is employed to work by the day, week, month, or year, and nothing is said as to the time of payment for his services, the wages are due and may be demanded at the close of each day, week, month, or year, as the case may be; but in such case, as upon all questions relating to the interpretation of contracts, custom has a strong bearing.

A man can contract to furnish his own services and those of his wife, and if she makes no separate claim can sue for them; and if such contract needs ratifying, the testimony of the wife in support of his demand will be a sufficient ratification.

A wife is not responsible for the wages of her husband's employee, notwithstanding the fact that she sometimes pays such wages.

When a master agrees to pay his servant what he considers the servant's services to be reasonably worth, or, where he agrees to pay the same wages as shall be paid to other men in his employ filling similar positions, and there is no showing that the master has other employees in similar positions, the servant is entitled to recover, in a suit for wages, what his services were actually worth. And where the master and servant agree as to the existence of the contract of service, but disagree as to the wages to be paid, the question of a compensation must be left to a jury.

Unless otherwise agreed, the wages of an employee must be paid in cash. The master has no right to handle, or invest, or in any manner apply such wages, whether beneficial to the servant or not, but must pay them directly to him.

An employer may discharge an employee before the expiration of the term of service stipulated in the contract for good and sufficient cause, as for incompetency. The discharge must be couched in such terms as to leave no doubt in the employees mind of the employers desire to terminate the relation.

In a majority of the States a contract for service for a specified time is considered apportionable, and an employee who has been

discharged for cause is entitled to compensation for the work he has actually performed.

When one has contracted to employ another for a certain period of time, at a specified price for the entire time, and discharges him wrongfully before the expiration thereof, the wrongfully discharged employee is entitled to recover an amount equal to the stipulated wages for the whole period covered by the contract, less the sum earned, or which might have been earned in other employment during the period covered by the breach. Upon dismissal a servant, under the law, must seek other employment, but extraordinary diligence in such seeking is not required of him. He is only required to use reasonable efforts, and he is not bound to seek employment or render service of a different kind or grade from that which he was engaged to perform under the violated contract, nor to seek employment in a different neighborhood; and if he fails to secure employment and works on his own account the value of such work can not be deducted from his claim.

Where an employee for a fixed period, at a salary for the period, payable at intervals, is wrongfully discharged, he may pursue one of four courses—

1. He may sue at once for the breach of contract, in which case he can only recover his damages up to the time of bringing the suit.

2. He may wait until the end of the contract period, and then sue for the breach.

3. He may treat the contract as existing, and sue at each period of payment for the wages then due.

4. He may treat the contract as rescinded, and sue immediately for the value of his services performed, in which case he can only recover for the time he actually served.

An employee is entitled to recover damages from a person who maliciously procures his discharge, provided he proves that the discharge resulted in damage to him.

An employer is entitled to maintain an action against anyone who knowingly entices away his servant, or wrongfully prevents the servant from performing his duty, or permits the servant to stay with him and harbors such servant with the intention of depriving the master of his services.

**COMBINATIONS AND COERCION OF SERVANTS.**—Everyone has the right to work or to refuse to work for whom and on what terms he pleases, or to refuse to deal with whom he pleases; and a number of persons, if they have no unlawful object in view, have the right to agree that they will not work for or deal with certain persons, or that they will not work under a fixed price or without certain conditions.

The right of employees to refuse to work, either singly or in combination, except upon terms and conditions satisfactory to themselves, is balanced by the right of employers to refuse to engage the services of anyone for any reason they deem proper,

The master may fix the wages, and other conditions not unlawful, upon which he will employ workmen, and has the right to refuse to employ them upon any other terms. In short, both employers and employees are entitled to exercise the fullest liberty in entering into contracts of service, and neither party can hold the other responsible for refusing to enter into such contracts.

It has been held, however, that employers in separate, independent establishments have no right to combine for the purpose of preventing workmen who have incurred the hostility of one of them from securing employment upon any terms, and by the method commonly known as blacklisting debarring such workmen from exercising their vocation, such a combination being regarded as a criminal conspiracy.

On the other hand, a combination of employees having for its purpose the accomplishment of an illegal object is unlawful; for instance, a conspiracy to extort money from employer by inducing his workmen to leave him and deterring others from entering his service is illegal; and an association which undertakes to coerce workmen to become members thereof or to dictate to employers as to the methods or terms upon which their business shall be conducted by means of force, threats, or intimidation interfering with their traffic or lawful employment of other persons is, as to such purposes, an illegal combination.

Unlawful interference by employees, or former employees, or persons acting in sympathy with them, with the business of a railroad company in the hands of a receiver renders the persons interfering liable to punishment for contempt of court.

**EMPLOYER'S LIABILITY FOR INJURIES OF EMPLOYEES.**—Where a person employs an independent contractor to do work for him and retains or exercises no control over the means or methods by which the work is to be accomplished, he is not answerable for the wrongful acts of such contractor; and the same rule governs as between a contractor and a subcontractor. Under these circumstances an employer would not be liable for an injury sustained by a workman in the course of his employment for which he would have been liable had the work been performed under his own direction.

An employer is ordinarily liable in damages to his employee who sustains an injury through the employer's negligence. Such negligence may consist in the doing of something by the employer which, in the exercise of ordinary care and prudence, he ought not to have done, or in the omission of any duty or precaution which a prudent, careful man would or ought to have taken.

An important duty on the part of a master is to furnish his servant with such appliances, tools, and machinery as are suited to his employment and may be used with safety; and if a master fails to use ordinary care in the selection or care of such appliances his ignorance of a defect therein will not excuse him from liability for an injury caused thereby; he is responsible for all defects in machinery or appliances of which he should have known, but

failed through negligence to learn of, or which, having learned of he has failed to remedy.

A railroad company is liable for injuries to its employees occasioned by the company's negligence in failing to keep its track or roadbed in proper condition; but such company is not bound to furnish an absolutely safe track or roadbed, its duty only being to use all reasonable care in keeping them in safe condition.

A railroad company is likewise liable if it fails to keep its track clear of obstructions and structures dangerously near the same; but such company is not negligent because it erects and maintains structures and contrivances for use in the operation of its road merely for the reason that they may be dangerous to employees operating the company's trains.

It is negligence for such a company to fail to use safe and appropriate engines; or to have the boilers of its engines properly tested; or to furnish suitable freight or passenger cars, and proper and safe attachments and appliances to be used in connection therewith; and such company can not divest itself of its duty to use due care and diligence with respect to the cars of other companies to be moved and handled by its employees, in seeing that such cars are in safe condition to be so moved and handled, by contracts with such other companies that they shall keep their cars in repair.

It is negligence in such a company to permit its employees to disobey its orders, and it is liable for injuries arising from the careless or reckless running of its trains, or the starting thereof without notice, or the running of its trains at immoderate speed.

Railroad companies, and employers of every description are negligent if they fail to protect a servant who is exposed to danger; but such a company is not absolutely bound to take all possible precautions against storms or against washouts, landslides, or other obstructions which may be dangerous to its employees. And if the mill of a manufacturing corporation is properly constructed for the carrying on of its ordinary business the corporation is not liable to an employee who has been injured by a fire, not caused by the negligence of the corporation because it failed to provide means of escape from the fire; nor is such corporation liable for an accident resulting in injury to an employee from its failure to fence the ordinary machinery used in the servant's employment; if, however there is a custom in reference to the adoption of certain safeguards in a given business so general that the employer is presumed to have knowledge of it, he is guilty of negligence if he fails to adopt such safeguards.

A master is not chargeable with negligence when an employee is injured through the use of a machine for an improper or dangerous purpose for which it was not intended or provided, but is guilty of negligence when he exposes an employee to dangers not obvious or fairly incident to the employment or where he introduces new and unusual machinery involving unexpected danger without notice to his employee.



Employers are not as a rule, required to furnish the best and latest improved machinery, but only such as is reasonably safe and suitable. Railroad companies, however are ordinarily bound to adopt new inventions as soon as they have been proved by satisfactory test to be safer than the appliances in use.

While it is the duty of an employer to exercise reasonable care in keeping buildings, machinery, tools, etc., in suitable and safe condition for use, and to this end he should frequently inspect the machinery, etc., used by his employees, the system of inspection need not be carried to such an extent as will embarrass the operation of his business.

A master who sets a servant at work in a place of danger without giving him such warning and instruction as the youthfulness, inexperience, or lack of capacity on the part of the servant reasonably requires, is guilty of negligence, and liable to the servant for an injury arising therefrom. The fact, however, that a master sets a minor servant to work at a more dangerous occupation than that in which he was originally employed does not, in itself, render the master liable for an injury resulting therefrom, unless under all the circumstances the setting him at such work was a negligent act; but the master will be held more strictly accountable in such a case than in the case of an adult.

Proprietors of manufacturing establishments are charged with the duty of exercising ordinary care in providing their employees with suitable places in which they can work in reasonable safety, and without exposure to dangers not within the usual scope of their employment.

It is the duty of employers to make and promulgate such rules and regulations for the government of their employees as will, if observed, give them reasonable protection; and employees are bound to obey all the lawful and reasonable commands of their employers, though such commands may seem harsh and severe.

It is also the duty of employers to have a sufficient number of trustworthy, competent employees to properly and safely perform the labor required in the business in which they are engaged.

When certain duties are imposed upon an employer by legislative enactment or municipal ordinance, designed for the protection of his employees, it is negligence on his part to fail to comply with such requirements, and he is liable to his employees for injuries arising from such negligence, unless it can be clearly shown that they assumed the risk.

An employer can not avoid his liability to an employee for injuries sustained by the latter through his negligence by means of a contract with such employee which provides that in consideration of the employment he shall be exempt from such liability. Such a contract is against public policy and void. The supreme court of the State of Georgia has, however, sustained the validity of contracts of this character.

**CONTRIBUTORY NEGLIGENCE BY EMPLOYEES.**—It is a general rule

that when an employee suffers an injury through the negligence of his employer he is not entitled to recover damages for such injury if his own negligence contributed thereto. Under this rule, where master and servant have equal knowledge of the danger of the service and the means of avoiding it, and the servant while engaged in the performance of his duties is injured by reason of his own attention and negligence, the master is not liable; and where the servant is told to do a particular thing and is not directed as to the time or manner in which the work is to be done, it being left to his discretion, so that he is given some control over the means, time, and manner of doing it, he is guilty of contributory negligence if he does not use the safest means, time and method of accomplishing the work and is injured while so engaged, and can not recover damages from the master; nor can he recover such damages if injured by the use of a defective appliance under his own exclusive care; nor where he had knowledge of a defect in an appliance used by him, through which he is injured, and failed to notify the master thereof, if no blame was imputable to the latter in failing to discover such defect, or in failing to furnish a safe and suitable appliance.

But an employee's right to recover damages for an injury is not affected by his having contributed thereto unless he was at fault in so contributing, and he may recover, notwithstanding his contributory negligence, if the master, after becoming aware of the danger, failed to exercise ordinary care to prevent the injury or willfully inflicted the damage.

When an employee in the course of his employment finds himself exposed to imminent peril due to the master's negligence, and in the terror of the moment adopts a course exposing him to greater peril and is injured, such action on his part does not constitute contributory negligence, and will not relieve the master from liability.

An employee is not guilty of contributory negligence if, when injured, he was exercising ordinary care to avoid injury and discharging his duties in a careful and prudent manner, and the injury was sustained by reason of negligent failure on the part of the employer to exercise ordinary care for the employee's safety, as failure to warn the employee of extraneous risks and unusual dangers known to the employer, but unknown to the employee, or to instruct an immature or inexperienced servant and warn him of the dangers attending his work not obvious to one of his capacity or experience; to provide suitable machinery, tools, and appliances for carrying on the work at which the servant is employed; to inspect and repair machinery, tools, and appliances; to provide a safe place for the servant to work, the ordinary risk of the business excepted; to guard against a danger to a servant of which the master has been notified, or which he has promised to obviate, or which he has assured the servant did not exist; to make and promulgate proper rules and regulations for the conduct of the employ-

ment in which the servant is engaged; to employ and retain a sufficient number of competent and trustworthy servants to properly and safely carry on the business. The employee does not assume the risk of injury by reason of the negligent failure of his employer in fulfilling any of the duties incumbent upon him, and, as before stated, is not guilty of contributory negligence when injured by such failure, if he himself was without fault in the discharge of his duty.

Contributory negligence is purely a matter of defense in actions by employees for damages resulting from injuries sustained during the course of their employment, and the burden of proving it is upon the master who seeks thereby to avoid liability for such damages.

**ASSUMPTION OF RISKS BY EMPLOYEES.**—Where an employment is accompanied with risks of which those who enter it have, or are presumed to have, notice, they can not, if they are injured by exposure to such risks, recover compensation for the injuries from their employer; by contracting to perform hazardous duties the employees assume such risks as are incident to their discharge, and he assumes not only the risks existing at the beginning of his employment, but also such as arise during its course, if he had or was bound to have knowledge thereof. He does not, however, assume the risk of dangers arising from unsafe or defective methods, machinery, or other instrumentalities, unless he has, or may be presumed to have, knowledge or notice thereof, and the burden of proving that an injured employee had such knowledge or notice of the defect or obstruction causing the injury is upon the employer.

The employee assumes all risk of latent defects in appliances or machinery, unless the master was negligent in not discovering the same; but the experience, or lack of experience, of the employee is to be considered in determining whether or not he is chargeable with knowledge of such defects as are not obvious and of the danger arising therefrom.

Another risk assumed by employees is that of the master's method of conducting his business. If the employee enters upon the service with knowledge of the risk attending the method, he can not hold the master responsible for injuries arising from the use of such method though a safer one might have been adopted; but in order to relieve the master from liability the method must amount to a custom or mode of carrying on the business, and not consist merely of an instance or any number of instances of culpable negligence on the part of the master.

**NEGLIGENCE OF FELLOW-SERVANTS.**—The general rule at common law is that he who engages in the employment of another for the performance of specified duties and services for compensation, takes upon himself the natural and ordinary risks and perils incident to the performance of such services. The perils arising from the carelessness and negligence of those who are in the same em-

ployment are no exception to this rule, and where a master uses due diligence in the selection of competent, trusty servants, and furnishes them with suitable means to perform the services in which he employs them, he is not answerable to one of them for an injury received in consequence of the carelessness or negligence of another while both are engaged in the same service.

Various attempts have been made by judges and text writers to lay down some rule or formula by which to determine what servants of a common master may be said to be fellow-servants assuming the risk of each other's negligence. The following are well-known definitions:

Persons are fellow-servants where they are engaged in the same common pursuit under the same general control.

All who serve the same master, work under the same control, derive authority and compensation from the same common source, and are engaged in the same general business, though it may be in different grades or departments of it, are fellow-servants who take the risk of each other's negligence.

The true test of fellow-service is community in that which is the test of service; which is subjection to control and direction by the same common master in the same common pursuit. If servants are employed and paid by the same master, and their duties are such as to bring them into such a relation that the negligence of the one in doing his work may injure the other in the performance of his, then they are engaged in the same common pursuit, and being subject to the same control they are fellow-servants.

All servants in the employ of the same master, subject to the same general control, paid from a common fund, and engaged in promoting or accomplishing the same common object, are to be held fellow-servants in a common employment.

It is said that these definitions are faulty and of little practical value by reason of their being stated so broadly and in such general and comprehensive terms; nevertheless they give a correct idea as to who have been determined by many courts to be fellow-servants within the rule exempting the master from liability for the negligence of one of them resulting injuriously to another.

The principal limitation contended for on the general rule in regard to fellow-servants is that there is such a servant as vice-principal, who takes the place of the master and is not a fellow-servant with those beneath him; and there is a variation of this idea to the effect that every superior servant is a vice-principal as to those beneath him. The doctrine of vice-principal is, however, repudiated by the courts of many of the States.

The master, as such, is required to perform certain duties which have been hereinbefore specified, and the person who discharges any of these duties, no matter what his rank or grade, no matter by what name he may be designated, can not be a servant within the meaning of the general rule on fellow-servants. The liability of the master for the nonperformance of such duties as the law im-

plies from the contract of service does not rest upon the ground of guarantee of their performance, but upon the fact of the presence or absence of negligence of the master in thier performance.

Whether one is acting as the representative of the master or merely as the fellow-servant with others employed by the same master does not depend upon his rank or title, but upon the character of the duties he is performing at the time another servant is injured through his negligence; if at such time the offending servant was in the performance of a duty which the master owed his servants, he was not a fellow-servant with the one injured, but a vice-principal, for the rule is fundamental that a master can not rid himself of a duty he owes to his servants by delegating his authority to another and thus escape responsibility for negligence in the performance of such duty.

If, however, at the time of the injury the negligent servant was not engaged in the performance of duty due from the master to his servants, but was discharging a duty which was due from the servant to the master, he was a fellow-servant to the one injured, engaged in the same common business, and the master would not be liable for the injuries sustained by reason of his negligence.

It is held by the courts of some of the States that, as industrial enterprises have grown, and, because of the division of labor and the magnitude of operations, have been divided into distinct and separate departments, a laborer in one department is not a fellow-servant with a laborer in another and separate department of the same establishment.

**INCOMPETENCY OF FELLOW-SERVANTS.**—If an employer knowingly employs or retains an incompetent servant he is liable for an injury to a fellow-servant sustained through the incompetency of the servant so employed or retained, provided the injured servant did not know and had not he means of knowing the incompetency of his fellow-servant. A master is not, however, liable for injuries to one servant by the negligence of another on the ground of unskillfulness of the latter unless the injuries were caused by such unskillfulness.

A master does not warrant the competency of his servants, but must use all ordinary care and diligence in their selecting and retention. If he has not been negligent in selection a servant, and subsequently obtains knowledge of the servant's incompetence and still retains him, he is liable to another servant for any injury resulting from said incompetence. If the employer had no actual notice of the servant's incompetence, if it was notorious and of such a character that with proper care he would have known of it, he will still be liable.

If a person, knowing the hazards of his employment as it is conducted, voluntarily continues therein without any promise by the master to do any act to render the same less hazardous, the master will not be liable for an injury he may sustain therein, unless it is caused by the willful act of the master. No servant is entitled

to damages resulting from the incompetence of a fellow servant when he knew of such incompetence and did not inform his employer of the same.

When it is alleged that the master has been guilty of selecting or retaining an incompetent servant, the burden of proof of said allegation is on the plaintiff. Neither incompetency nor unskillfulness will be presumed; they must be proved.

A master who has employed skillfull and competent general agents or superintendents is liable for injuries received by inferior servants through the negligence of those employed by such general agents or superintendents without due care or inquiry, or retained by them after knowledge of their incompetence.

While the servant assumes the ordinary risks, and, as a general rule, such extraordinary risks of his employment as he knowingly and voluntarily encounters, he is not required to exercise the same degree of care as the master in investigating the risks to which he may be exposed; he has the right to assume that the appliances and machinery furnished him by the master are safe and suitable for the employment in which he is engaged; and to assume, when engaged in an occupation attended with danger and requiring engrossing duties, that the master will not, without proper warning, subject him to other dangers unknown to him, and from which his occupation necessarily distracts his attention; and he has the right to rely upon the taking by the master of all usual and proper precautions against accident, and his faithful fulfillment of all the duties devolving upon him.

If an employee is ordered by his master into a situation of danger and obeys, he does not assume the risk unless the danger was so obvious that no prudent man would have obeyed the order; and the master will be liable for any injury resulting to him by reason of such dangerous employment. If, however, he leaves his own place of work for one more dangerous, in violation of the master's direction, he can not recover for an injury sustained after such change.

If the servant, upon being ordered to perform duties more dangerous than those embraced in his original employment, undertakes the same with knowledge of their dangerous character, unwillingly and from fear of losing his employment, he can not, if injured, recover damages from the master; nor can he recover such damages where the injury results from an unexpected cause during the course of his employment: nor where the injury is sustained in the performance of a service not within the scope of his duty, if his opportunity for observing the danger is equal to that of his employer; and where an employee voluntarily assumes a risk he thereby waives the provisions of a statute made for his protection.

## THE INDUSTRIAL PROGRESS OF THE SOUTH.

An address by Hon. Carroll D. Wright, United States Commissioner of Labor, before the Thirteenth Annual Convention of the National Association of Officials of Bureaus of Labor Statistics, held at Nashville, Tenn., May 19-21, 1897:

A generation ago two hostile armies composed of American citizens, and both magnificently generalled, were exchanging shots on American soil. Each army was fighting for what it thought a patriotic cause. With this cause we have nothing to do on this occasion; but American soldiery, as represented in those two armies and in their contest, convinced the world that engaged in a common cause, it could not be withstood. At the close of the contest the South found itself under entirely different conditions from those existing when the contest began. Its social as well as its industrial system was completely reversed, its fields devastated, its railroads practically destroyed, its wonderful resources either unknown or entirely undeveloped, its political status uncertain in the extreme, an unknown material future before it,—in fact, its people bankrupt, and only the people and the country with which to begin anew in the world. This is the account of stock of the South more than thirty years ago. Every wise business man must take an inventory occasionally in order to understand whether or not he is meeting with success in the enterprise that demands his effort; so the South must occasionally take its inventory and see if out of the account there can be drawn encouragement for future activity.

It is a trite saying now that history finds few parallels to the sublime patience displayed by the South during the years following the war; but I shall emphasize this statement, however trite it may have become. It is true that the patience displayed is unparalleled; but patience alone can never accomplish much. It is a negative quality, although one of the most essential elements in human affairs. Allied to activity, patience becomes something more than waiting. Patience alone depends upon fate. No country can prosper under patience alone; but when men put the activity and the courage into business, the development of resources, and the upbuilding of their land which they displayed so magnificently on the field of battle and in a four year's contest, then we can see the positive virtues of patience.

The past generation is divided into two natural periods. The first twelve or fifteen years was the period of patience. The South was pulling itself together. It was adjusting itself to the new and strange conditions in which it found itself placed. I imagine the severest trials through which the Southern people passed were those of the years subsequent to the war when they were adjusting themselves or wondering whether any adjustment

would ever come; but during that period men were prospecting the country, were ascertaining where the hidden wealth was stored, were showing the openings for future enterprises. The younger men of the South were learning that there were two aristocracies,—the one which their fathers represented, the ever attractive, honorable aristocracy of blood, and that other aristocracy which claims admiration today, the aristocracy of enterprise, activity, and development; so while claiming to be the scions of the one, they became members of the other, and with the pride and the ambition which the first had furnished they put their shoulders to the wheel in making the newer aristocracy respected the world over. When that period of self-study, of patient waiting, of observation passed, the South found itself ready for the capital that had been waiting to enter its domain, and the last half of the generation has shown a progress not only remarkable for its extent and the diversity of its results, but magical, as we study its proportions. The first source of wealth which attracted capital to the Southern States was hidden beneath the surface—the mineral deposits of the country—and it is well here to comprehend the vastness of this wealth. Mr. Edward Atkinson, one of the most intelligent observers of industrial affairs, recently published a pamphlet on “The Future Situs of the Principal Iron Production of the World.” To enable him to come to correct conclusions, he asked Col. Geo. B. Cowlan, of Knoxville, Tenn., and Maj. Goldsmith B. West, of Tredegar, Ala., to make a report to him on the resources of the Southern Appalachian region, and especially its stores of coal and of iron ores, and the conditions favoring or obstructing the economical manufacture of iron and steel in the Southern States. This report is eloquent indeed with facts, and I can not do you a better service or more correctly outline the wealth of the Southern States than by using its substance.

The Southern Appalachian region, while it does not cover all the iron and coal resources of the Southern States, probably contains the great bulk of minerals of best quality. It embraces a strip of elevated mountainous country seven hundred miles long, with an average width of one hundred and fifty miles, and lies northeast and southwest in a course diagonally across a square formed by the 34th and 40th parallels of north latitude and the 77th and 87th meridians west from Greenwich, and extends from the Pennsylvania line, the great iron region of the North, southwestwardly through Maryland, the Virginias, Kentucky, Tennessee, the Carolinas, and into Alabama and Georgia. It is divisible into three strips, which run parallel with its side lines, and which are of substantially equal areas. The northwestern strip, that running from Pennsylvania to Alabama, varies in width from more than one hundred to less than thirty miles, and averages over fifty miles wide. It is an unbroken coal field of more than thirty-nine thousand square miles, its surface being a combination of mountain and plateau, having an average elevation of two thous-



and feet above the sea level. This strip is cut through by two streams, the New river in West Virginia and the Tennessee in Alabama. In it are found generally from two to five workable seams, mostly above drainage, and so situated as to make the mines self-draining, an advantage of the greatest importance. In portions of West Virginia, Virginia, Kentucky, and Tennessee the measures are thick and the seams large and numerous. In Tennessee, north of Knoxville, there are sixteen seams above the drainage line, nine of which are three and a half feet thick or more. The seams in the States named are often found to be six or eight feet in thickness, and in some cases ten, twelve, and fourteen feet of solid coal can be worked, and this coal comprises every variety of bituminous coal, of the highest standard of excellence, high in carbon, and notably free from sulphur. There is also to be found block coal of the best shipping quality, unexcelled for steam or grate, splint coal of the best, and cannel coal, some of which will compare favorably with the celebrated Yorkshire cannel, and coking coal of the highest standard is found throughout the length of the coal field. The vastness of this coal area of the Southern Appalachian field is readily comprehended under the statement that it contains forty times the amount of coal, accessible to economical production and distribution, that was contained in the coal field of Great Britain before a pick was struck. Great Britain has not begun to exhaust her store, and with the Southern Appalachian field, containing forty times the original coal deposits of Great Britain, the South may well feel that she has a bank of inexhaustible deposits on which no successful "run" can be made.

But in addition to the coal under the ground, the region I have described is, as a whole, heavily timbered with virgin forests of white, red, black, Spanish, and post oaks, yellow poplar, white and yellow pine, hickory, chestnut, and other valuable woods. Its soil is of sandy loam and produces excellent crops of grass and small grains, it is productive of fine fruit and vegetable crops, and when enriched by lime or phosphates, or by grass crops turned under, it becomes fertile farming land. Over all the region there swings a bracing, dry air, and a pleasant temperature, which render it remarkably exempt from fevers and pulmonary diseases, while the frequent summer rains resulting from its elevation save its soil from summer drought. All these natural conditions are guarantees for favorable and economical mining and for cheap and comfortable living.

The other great strips lying parallel with that described are rich in various kinds of ore, while in some portions the Bessemer ore is found in satisfactory quantities.

As a whole, the Southern Appalachian region is wonderfully favored by its topography for development. A study of it shows a system of cross-lines. In the Virginias and Maryland the streams take their rise in the higher western ranges of the coal field and flow eastward, through the iron-bearing ranges, to the Chesapeake.

In the Carolinas and Georgia the streams take their rise in the easternmost part of the iron-bearing ranges and flow through them to the valley, where they are met by streams flowing eastward from the coal field. Messrs. Cowlam and West, in their report from which I have drawn so freely, speaking of the topography of this region, use the following language:

"Given the quantity and position of these belts of interdependent resources, and it is difficult to see how a skilled engineer could trace on a map lines more advantageous for their concentration and manufacture than the lines which nature has here drawn upon the face of the earth by streams which cut through, from the one side or the other, the mountain ranges or valley ridges which separate them. Not only has she provided grades from the valley lines northward to the coal and southward to the ores, but cross lines to connect the region with the Ohio Valley and Lake country on the north and west and southward to the Atlantic, can be cheaply built. With this wealth of the South piled up in its central region, with natural outlets northeast to the Chesapeake, southwest to the Gulf, southeast to the Atlantic, and northwest to the Lakes, this great natural storehouse and workshop, the Southern Appalachian region, as a foundation for the creation of wealth certainly equal to that of any portion of the world of like area."

The annual production of coal in the Southern States\* in 1880 amounted to 5,986,588 long tons, or about 9 per cent. of the total annual production of the entire country. In 1895 the production was 29,628,238 short tons, or 15 per cent. of the entire production, and an increase in the net annual production of 23,641,650 tons. This output required about 45,000 more miners and at least one-fourth as many more men doing day work in and about the mines, not counting coke workers, than were employed in 1880; and to haul the increased product to the market required 195 train of 400 tons each per day more than in 1880, all of which affords support to over 300,000 people, including the families of those directly employed. But the greatest benefit this marvelous progress in the coal industry during the past fifteen years indicates is the growth in the manufacturing and the extension of the railroad interests.

In 1880 there was a total of 1,788 coke ovens in the South; by 1895 the number had increased to 16,856, being 37 per cent. of the total number in the United States and a net increase during the fifteen years of 15,065 ovens. The coke production of the South in 1880 amounted to 372,436 short tons, and in 1895 to 3,457,031 short tons, an increase in the annual production of 3,084,595 tons. In 1880 the production formed 11 per cent. of the total for the entire country, and in 1895 it formed 26 per cent.

With the development of the great coal fields of the Southern Appalachian region, the iron ore mines have been developed, and the development is shown clearly by official statistics. The

\*Missouri has been excluded generally in the comparisons made in this address.

Southern States, in 1870, produced but 184,540 tons of pig-iron. In 1880 the production was still small, being 397,301 net tons, or 9 per cent. of the total production for the United States; but in 1890 we see the result of ten years prospecting, of development, and of activity in the 1,780,909 short tons of pig iron produced. In 1895 the amount produced was 18 per cent. of the total product of the United States.

On January 1, 1896, there were 133 completed blast furnaces in the South, with a total annual capacity of 4,531,350 long tons.

The number of furnaces was 28 per cent. of the total number in the country, and the capacity 26 per cent. of the total capacity. At the end of the year, December 1, 1896, about 27.9 per cent. of the blast furnaces of the country were in the Southern States. The general decline during the year in the number of active furnaces in the North was about 42 per cent., as compared with a decline of 29 per cent. in the South. The output of the furnaces in the South declined about 15 per cent. during the year, while the output in the North decreased about 34 per cent.

In steel the South has not yet made much progress. In 1880 the number of net tons produced was 4,350 and in 1890 the production was 184,625 tons; that is to say, in 1890 the South produced almost exactly the same quantity of steel that she produced of pig iron in 1870. This is a most encouraging outlook, and bespeaks for the South a steel industry in the future of which she will be proud. Bessemer steel is not so distinctly a Southern product as pig iron and no large deposits of iron ore suitable for making pig iron for conversion into Bessemer steel have yet been developed in the Southern States, with the exception of the Cranberry deposits in western North Carolina; but promising discoveries of Bessemer ore have been made in Texas and in other localities, and the development is taking place. These deposits may in time supply the raw material for a Bessemer steel industry at Southern points. The production of pig iron may well claim the present attention of the South rather than the manufacture of standard or acid or Bessemer steel.

The advantage which the South has in bringing together the materials of which iron is made are such as indicate that in the future the disadvantages as to freight or other obstacles will be fully overcome.

Prosperity in the iron industry naturally indicates prosperity in all other industries. It is one of the basic industries of any country. When it languishes, other industries are apt to droop; when it flourishes, we can usually look for flourishing conditions in other directions. But in the South the raising of cotton may be called the basic industry, for the cotton crop occupies a different position from others, because in general lines of industrial progress we have to go back to a period of development, which is really the constructive industrial period of the South, and so the per centage of increase, up to a certain period of development,

must be much larger, comparatively, than in other parts of the United States until such development shall have reached a point where it will begin to recede, relatively, but proceed on lines harmonious with the whole country. Cotton cultivation, therefore, as truly indicates the industrial growth of the South as does the development of the iron industry, and perhaps more truly, because of its long-continued supremacy. The largest crop in the Southern States prior to the war was in 1860, when 4,861,292 bales were produced. The cotton crop did not approach this quantity again until 1871, when it was 4,352,317 bales. In 1876 it nearly equalled the proportions of that of 1860, but since 1878 there has been no year when the crop has not been greater than at any time prior to the war, and in the year 1895 the production reached 9,500,000 bales, and about 700,000 bales of the product were consumed in Southern mills, as against less than half that quantity ten years before. But the value of the cotton crop has been enhanced by invention as well as by increased quantity. Prior to 1880 cotton seed had little or no commercial value, although at that time the attempts to extract the oil therefrom had resulted in the crushing of 294,519 tons, while in 1890 the cotton seed oil mills crushed 1,058,200 tons, the product being worth \$27,310,836, an increase in round numbers in ten years of \$24,000,000. In 1894 there were 252 establishments in the United States engaged in the cotton seed oil industry. The annual product of these establishments was valued at \$30,000,000. "An annual crop of cotton seed amounting to 4,500,000 tons would yield 202,500,000 gallons of oil. Although only about one-third of the crop now reaches the mills, cotton-seed oil is now produced in larger quantities than any other vegetable oils. This oil finds ready sale in all the markets of the world." (a)

The great increase in the consumption of cotton in the cotton mills of the South during the decade from 1880 to 1890 indicates that there has been a large increase in all the instrumentalities for the production of cotton goods. The number of cotton mills increased from 180 in 1880 to 254 in 1890; the number of spindles from 667,754 to 1,712,980, and the product from \$21,038,712 to \$46,971,503.

The number of cotton spindles in the United States increased from 13,470,981 in 1897 to 18,753,935 in 1896, an increase of 39.22 per cent. During the same period the number of spindles in the South Atlantic States increased from 1,180,604 to 2,980,113, or 152.42 per cent. and in the South Central States from 335,220 to 627,770, or 87.27 per cent. While the increase in the actual number of spindles was greater in the North Atlantic than in the Southern States, the relative increase in the North was much less, being only 26.39 per cent. The greatest percentage of increase, 328.54, in the South, is shown for the State of South Carolina, where the number of spindles increased from 232,692 to 997,185. Consider-

a Farmers' Bulletin, No. 36, Department of Agriculture.

ing the three States of North Carolina, South Carolina, and Georgia, the gain for the ten years aggregate 1,772,527 spindles, while the gain in Massachusetts amounted to 2,460,522 spindles. In 1887 the spindles in these three Southern States amounted to 16.25 per cent. of the number in Massachusetts, while in 1896 they were 33.87 per cent. of the number in that State.

In 1880 there were 464 establishments for the manufacture of wool in the Southern States, while in 1890 there were but 261. This apparent decrease is due to the disappearance of custom carding mills, which formerly carded wool to be spun in families, and which were returned as separate establishments. These local carding mills have now almost entirely disappeared. There have probably been some consolidations as well, which would partially account for the decrease in number. But the decrease in number in no way indicates a decrease in other features, for the capital invested in the woolen manufactures of the Southern States was \$3,343,527 in 1880 and \$9,064,406 in 1890. The average number of hands employed in the industry had increased from 3,038 in the year 1880 to 7,920 in 1890. The amount of money paid out in wages to these hands rose in ten years from \$563,825 to \$2,063,303, while the value of the product turned out increased from \$4,500,199 to \$8,434,020.

Of the total production of the three great cereal crops of the country, wheat, corn, and oats, for 1896, the Southern States produced 17 per cent. About 11 per cent. of these crops in the South was shipped out of the country where grown, a much larger per cent. being retained for domestic consumption than in the country at large, as about 30 per cent. of the entire crop was shipped out of the country where grown.

"The first steamship to cross the Atlantic sailed from Savannah in 1819.

"Of domestic exports, the South supplied \$99,500,000 of \$132,667,955 in 1849, according to one estimate; \$181,801,257 of \$338,985,065 in 1857; \$163,082,965 of \$293,758,279 in 1858, and \$196,801,876 of \$335,894,385 in 1859. Of the exports in that year, \$5,281,091 were classed as exclusively Northern, \$57,502,305 as specie, \$84,417,493 as from the North and the South jointly, and \$188,693,496 as exclusively Southern." (a)

In the production of fermented liquors and distilled spirits the increase has been relatively large. In 1880 the production of distilled spirits amounted to 21,413,237 gallons, and in 1890, 44,276,093 gallons, while of fermented liquors the Southern States including Missouri produced in 1880 1,340,037 barrels, and in 1890 the production was 3,482,869 barrels.

A line of development which indicates the prosperity of a great region as emphatically as does the progress in industrial matters is that of transportation. The mileage of Southern railroads was increased from 20,612 miles in 1880 to 46,974 in 1894, and the

a "Southern Side Lights, by Edward Ingle.

number of passengers carried from 6,395,000 in 1880 to 30,061,000 in 1894. Nothing could display the activity of a people more emphatically than this. The number of passengers carried was increased nearly four-fold, and the amount of freight moved grew from 17,759,441 tons to 61,771,929 tons. The earnings from passenger service were more than doubled, as were the earnings from freight service, and the total earnings and income of Southern railroads was increased from nearly \$47,000,000 in 1880 to more than \$103,000,000 in 1890. In the first year of the decade there were 37,000 employees engaged in the railroad business of the Southern States, while in 1890 there were nearly 90,000. All this vast increase in the railway service of the Southern States has been due to industrial activity in the truer sense\*.

According to an estimate based on the census of 1890 there were about 14,921,122 wage earners in the United States, and of this number 4,015,593, or 27 per cent., were in the Southern States. Of the wage earners in the South, 1,798,237 were engaged in agriculture, fisheries, and mining; 1,092,950 in domestic and personal service; 413,170 in trade and transportation, and 711,236 in the manufacturing and mechanical industries. There was one wage earner in the South to every 1.7 persons engaged in all gainful occupations, and in the States exclusive of the South there was one in every 1.5 persons.

The question may be asked, when all this material progress has been shown (and I regret that I can give you only those things which are indicative, and not all the statistics), Is the South really improving in its actual prosperity financially? The capital invested in the great industries of the South is represented by the banking capital, which in 1880 was \$92,500,000 and in 1890 more than \$171,500,000, an increase of over 85 per cent.; the capital invested in manufacturing establishments of all kinds was advanced from \$179,300,000 in 1880 to \$551,500,000 in 1890, while the total number of hands employed was more than doubled, being 153 per cent. greater in 1890 than in 1880.

While these truths are large and somewhat dazzling, they might not indicate the truth as to the real financial condition of the South; but this can be ascertained by an examination of the statistics of indebtedness. The total indebtedness of the Southern States, including county debts, and less the sinking fund,—that is, practically, the net total debt,—was, in 1880, \$215,712,241, while in 1890 this indebtedness had been reduced at \$178,162,755. The reduction is best expressed by the figures representing per capita indebtedness. In 1880 the total net indebtedness of the Southern States was \$11.20 for every inhabitant; in 1890 it had been reduced so that each person was represented by an indebtedness of \$8.08. This is a most excellent showing, and proves conclusively that the prosperity of the South is not on the surface,

\*Not all Southern States are included in these statements as statistics for all could not be obtained.

but that it is real and that it results in the best material prosperity of the people.

The real value of real and personal property in the South in 1860 was \$6,833,670,687, an increase of 126 per cent. in ten years; and in the North, \$9,325,945,381, an increase of 139 per cent. Holdings of personal property exceeded those of real estate in all the South except in Delaware, Kentucky, Louisiana, Missouri, Tennessee, and Virginia, but in only three States of the North. When it is considered that the possession of slaves swelled the value of personal property and the percentage of increase, and that the slave-holding class, who were also large land owners, were but one-fourth of the white population, it will be seen that the greater part of the Southern wealth was held by a comparative few.

The true value of all real and personal property in the Southern States, according to the eleventh census, amounted to \$11,150,532,304. Of this total, real estate and improvements formed \$6,219,245,024. The remaining \$4,931,287,280 represented the value of livestock on farms, farm implements, and machinery; mines and quarries, including product on hand; gold and silver coin and bullion; machinery of mills and product on hand, raw and manufactured; railroads and equipments, including street railroads; telegraphs, telephones, shipping, and canals and equipments, and other miscellaneous property.

The per capita value of real and personal property in the South Atlantic States advanced from \$333 in 1850 to \$579, in 1890, and in the South Central States from \$299 in 1850 to \$569 in 1890.

Turning from the material side, another question may be asked, Is the South keeping pace in other matters? Indicative facts in this direction are found in the expenditures for educational purposes. In 1878 the Southern States expended \$8,887,570 for school purposes, including buildings, school expenses, salaries, etc., but not payments of bonded indebtedness. In 1888, ten years later, such total expenditure reached \$16,806,668. That the South in educational matters, through her own expenditure for school purposes, is keeping pace relatively with her industrial growth and with that of the whole country is clearly and emphatically shown by these figures. The enrollment in the public schools show the same general activity in educational work that pervades the South in industrial matters. The percentage of enrollment of the whole population in 1880 was 16.59, and in 1890 it had risen to 20.27; while in the whole United States the percentage of enrollment of the total population was 20.22. The increased enrollment in the Southern States represents both the white and the colored, and in about equal proportions.

I may have wearied you too long with figures and yet they are more eloquent, when dealing with industrial affairs, than any other form of expression. They give concretely the results of great enterprises, of the movements of thousands of people; they crystal-

ize the moving history of the time, and it is only through them that we can reach positive knowledge as to material affairs. The inventory relating to the present industrial status of the South, as compared with that of fifteen years ago, must give great satisfaction to the people of the South, for the account discloses clearly the actual results of that great alliance of patience and activity which has characterized her history. Yet, my friends, there is another and an anxious side to this whole business, which can not be brought out by any statistical tables, and it is so thoroughly a part of industrial progress that I can not forbear calling your attention to it. It is a side of the industrial movement of the age which belongs to the whole country. The North has seen some of it, the South but little of it.

The broad acres of our country, stretching from ocean to ocean, yet bound by a cord of commerce that has made of oceans near neighbors and of mountains level plains; all our boundless wealth, the tireless energy of our people, the hunger for progress, and the thirst for knowledge,—all these betoken deeper movements than those necessary for the accumulation of wealth, and they appeal to us to pause always when considering material progress to consider the more philosophical and psychological elements of industrial conditions. The industrial future of the South is assured, the future situs of the iron industry is America, and it may be that the future situs of the American iron production is in the great Southern field. Some may tell you that the South is suffering from a check in the development of the iron and cotton industries, that the railroad systems of the country have been so fully developed that the demand for the product of your iron mines will decrease henceforth. I can not agree with this view. The railroad systems of the country may not be developed as rapidly during the next ten or fifteen years as they have during the past twenty years, but the materials of the roadways will wear out. Throwing the whole railroad business out of account, except that necessary to keep the systems in proper working order, and then, to my mind, the demand for the products of iron mines must increase. The consumption of structural iron and steel must inevitably increase the demand. For all building purposes the increased use of iron is so great that other than agriculture it must remain the basic industry of this and other countries. The development of rapid transit in our great cities means their tunneling, and the tunneling of great cities means the use of enormous quantities of iron and steel casings. Sanitary conditions everywhere demand the displacement of perishable material by imperishable, and in all the ramifications of the development of building operations, engineering, and all that makes for the progress of our age are found the great use of iron and steel. So the South, having the raw material, the enterprise, the facilities, must be in a position to meet the constantly increasing demand, and she can compete in supplying this demand only by the development of her facilities



for reaching markets, and hence the establishment of deep water privileges becomes as essential to her as to the East and the North. These deep water facilities are at hand. Already the steamship lines from Southern ports are demonstrating the ability of the Southern States to transport their productions at low freight rates. Many steamers are now loaded at Mobile for foreign ports and the South is shipping pig iron in them, while consignments of corn and machinery have been made to the Northwest. We have seen the ability of the New South to manufacture her timber, her ores, and her cotton into finished goods, and by the extension of her railroad systems to ship them from factories in the interior to outside points. Now she can, with some additional improvements in the Warrior, the Tombigbee, and the Alabama rivers, ship her products to the Gulf coast, whence she can place them in Central and South America and Cuba, and by a network of competitive railroads thrown over her area from the Atlantic to the Rio Grande, she can command all the deep water facilities essential to her rapid development. (a)

These developments bring the South into the swim of sharp competition and a participation in all that belongs to the great trading interests of the world. The South has, in doing all this, a class of dusky laborers, who flourish on corn-bread and bacon, but who do not strike, and she has, working along with them, skilled laborers who do not flourish on corn-bread and bacon, and who do sometimes strike. Material prosperity brings its troubles, but it develops the higher attributes of human nature.

There is a system of a criticism or a method called "socialism," but socialism is of two kinds, material socialism and philosophical socialism. The basis of the first is hunger, that of the second theoretical dreaming and a real sympathy with the lowly and unsuccessful. The one finds its source in the stomach, the other in the head and heart. These two socialisms work both harm and good, and they both grow out of industrial conditions to a large extent. The African is probably in no sense a factor in creating socialistic views, either from a material or a philosophical standpoint; yet the South has with it the great negro question, which belongs to the whole country in its influence, and which may become one of the objective points of socialism. To the South alone it is a double question,—Is there any solution of what is known as the "negro question?" and, Will the development of negro labor lead to the agitations and the troubles which accompany industrial communities in other parts of the world and to socialistic complications? In the first place, to my own mind, there is no forcible solution of the so-called negro question: that is to say, it is absurd to think of colonizing the negro, either at home or abroad, or of disfranchising him. He has been enfranchised, for weal or for woe, and he can not be disfranchised. He can not be transported under a colonization system, for his race is too numer-

a Cf. John A. Conwell, in *Bel ford's Monthly* for February, 1892.

ous, and, again, it would be against the common instincts of humanity to undertake any such gigantic scheme. He may be educated, but the ordinary philanthropy which seeks his education is based upon a fundamental error. It thinks it can make of the African a Caucasians. It can not. It may be the means of developing the best kind of an African, but it never can develop the African into the Caucasian, any more than the same kind of philanthropy has been able to develop an Indian into a Caucasian. The only true policy is to do the best that can be done in developing the very best negro and the very best Indian out of the present negro and Indian and make of them industrious and intelligent citizens. Education by the book is all very well, but it is not sufficient. What the negro needs is what the Indian needs, and that is to be taught how to do something fairly well. The Federal government will never make the great mistake in relation to the negro that it made in relation to the Indian, that of trying to deal with him through treaties. To my mind, the basis of nearly all the trouble that has ever existed relative to the Indian can be traced to a fundamental error, that of the government making treaty with its own subjects. To colonize the negroes of the South or any portion of them would involve the same illogical proceedings. But the education of the negro along industrial lines—the education of his hand as well as of his mind—can be accomplished in some degree, and as this education is accomplished the negro steps onto a higher plane of living, he outgrows the standard of cornbread and bacon, he increases his consuming power from less than a dollar per week to that of the Caucasian, which is more properly represented by three dollars per week, and under such education he becomes essentially an economic factor in the adjustment of the conditions of production. The negro question resolves itself into the whole race question for America. The negro can not be assimilated with the white race, as some members of Caucasian nationalities who come to America can be assimilated with others here before them; but in his treatment the question is the same, and that is, how to mould all the different members, differing as to race and nationality, that are found upon American soil, into industrious and self-supporting American citizens, and from whose independence and capacity there shall come respect and proper standing, and the right and the opportunity to earn in honorable ways a competency.

I believe, therefore, that the whole negro question must be considered along industrial lines, and that by so considering it the solution will grow more apparent, the status of the negro more satisfactory, and the welfare of the community more thoroughly assured. But this leads me to the thought which I indicated, and that is the troubles which always come when the lower strata of society become ambitious to reach a higher plane; discontent always accompanies progress; but such discontent is only another name for ambition, and ambition brings many troubles, and labor troubles among the others.

The American civil war, like nearly every other, was organized for political purposes, but the philosophy of it has taught us that it was in reality a great labor movement. (a) Divested of all political and sectional significance, the war was one of economic forces, with good or ill results to the industrial elements of the nation, and particularly to the South, for the South had existed under a form of labor entirely antagonistic to that of all lands where material progress has accompanied the growth of peoples. It was an agricultural region, and therefore subjected to the conditions which always accompany a community given to agricultural pursuits. It is simply a matter of history that agricultural sections can not advance with great rapidity, but that in varied industries there is mental activity and mental friction. There is always, under the agricultural regime, the most respectable society, consisting of men who are trained in statecraft in a larger degree, perhaps, than are men who come from communities devoted to mechanical industries; notwithstanding, great development must depend upon varied industry. Under the old regime the South had been waiting, as had the late Count Chambord of France, for the world to turn backward, and to bring with such turn the wealth which can come only from a development of natural resources. All these resources existed in the South, but had not been developed. It is not essential at this time to discuss fully the reasons why immigration passed by the rich deposits of iron and other ores, and coal to work the ore; the timber, pasture, and arable lands which existed without stint; the water-powers that might turn the wheels of industry; the climate, charming enough to allure dwellers from inclement zones, and the scenery, as varied and beautiful as can be found in any of the States, and sought the flat, cheerless, shadeless, and oftentimes malarial districts of the West. This did occur, and the fact is sufficient. But there came a change in the form of labor in the way of the emancipation of labor, and with that emancipation there has come industrial competition with the North and with Europe. The buzz of machinery is now familiar to Southern ears, and the whole country is learning again the oft-repeated lessons that no section devoted to one industry can hope for great success, but that in a diversity of employment lies the welfare of the people. The cultivation of the soil, the most attractive branch, it may be of human industry, honorable and independent in the highest degree, must be allied to the mechanic arts in order to secure the best industrial results. These conditions are coming rapidly in the South, and with their coming there are to be found the industrial difficulties of the present, not as the result alone of their coming, but contemporaneously and as a result of mental activities and frictions; for there is discernable an apparent complication in this, that the labor of the factories of the South is of a primitive

a Many of the thoughts expressed in the next few pages were embodied in an address by the writer, delivered at Winchester, Pa., in September, 1889.

kind as yet, and as such its wages are the minimum wages, and this labor must compete with the older and better-paid labor of other sections of the country and of Europe. This variance in the wages paid will not, however, have any lasting, and I trust little, if any, temporary influence upon wages in other parts of the world, for they are now too low, as a rule. As the mechanic arts become extensive in the South, its labor will seek a corresponding elevation in rates, and thus, while the South is now practically free from what are called "labor difficulties," the time will soon come when free labor will demand a greater reward, and this demand will result in so-called labor controversies. Then the wisdom of the employers, and the temper, morality, and intelligence of the employees will be put to a severe test, and the outcome will depend upon the fairness and justice with which the complications are treated.

While slavery is the simplest form of labor, as despotism is the simplest form of government, the moment freedom comes, individual rights become prominent, and social, political, and industrial affairs correspondingly complicated. Strikes, lockouts, and all the apparent evils of the apparent struggle between labor and capital will become familiar in the South, as they have been and are in the North, and with them will come dreams of the peaceful days of slave labor, and then Southern patience will be tried in new directions as severely as it was tried in the years immediately subsequent to the war; but the South knows the cost when differences are brought to the arbitrament of arms, and will know that industrial peace must be preserved in order that the great industrial development of the South may receive no check, no retarding influence. I do not believe that the labor difficulties that hereafter will crop out in the South will be as severe or as irritating as those which have occurred in the North and other parts of the world, for much has been learned, and the men of the South have the advantage of the experience which has come to both labor and capital in the matter of differences. Demagogues often seize upon labor strifes as a pretext to secure power. This action, demoralizing in all respects, is not so potent as it has been; but to secure power or to excite people, we shall be told sometimes that such and such action must be taken to prevent strife. There is probably no war, either industrial or political, in our immediate future. No great political questions agitate our people as they do those of European countries. We have no vital questions before us which mean to us what the vital questions of European politics mean to the peoples of Europe. Our questions, so far as magnitude is concerned, belong to the economic development of the resources of our country. Our future must be a continuance of the contests with nature; the great questions for us to meet grow out of industrial relations and interests, and although politicians may turn first to one side and then the other of the economic forces of the country, the line of march will be quite independent of them,

after all. And yet the industrial problems of our future may well excite the anxiety of conservative minds, for upon their treatment depends the peace of the country, to some extent, and, maybe, of the industrial world. So our very best services must be called to the social and economic contests of our epoch.

We need and we have the men able to project and carry to success great industrial and commercial enterprises that would have staggered the great statesmen of the past. These men exhibit a capacity for the organization of varied forces which commands our enthusiastic admiration, for the genius they display finds no equal in past enterprises. To such men the business of government would be mere child's play. So while at present we demand fidelity and good ability in our governmental places, we must have commanding genius in the leaders of industry. These leaders are teaching the world that America holds the key to future industrial supremacy among nations, so far, at least, as material development is concerned, and this material development, as I have already said, is creating an aristocracy here in whose ranks the proudest may march,—the aristocracy of brains. It is this new aristocracy that is rapidly supplanting the old in England. In America this great development gives us occasionally colossal wealth held by an individual, but such wealth is mere dross without a moral community, for whose benefit the millions must really be invested. Fortunes belong to men, but the principles of their value are of God. There is no return for inactive capital, and mere money is nothing to its owner without activity. It is against the bad use of great fortunes men have a right to enter their protest. When used in fostering the grand projects of peace, in the establishment of institutions of learning, in carrying on the work of inter-communication, in opening new lines of industry,—all such employments of wealth call for the very best genius of our land, and in these lines of work are to be found the men who, in great national extremities, will step to the front as statesmen, and these men are gradually coming to the conviction that moral forces should be recognized in the conduct of industrial affairs, that property has no value except when surrounded by a moral and industrious people, and that a well-paid and reasonably-contented workman is worth more, not only to industry, but to himself and his community, than one unhappy and poorly paid, and that the best paid labor is the cheapest in every economic sense. It is when these principles are reversed that labor troubles occur and that iconoclastic socialism finds increased strength among the workers of society. The growth of the sentiment I have indicated belongs more thoroughly to the present than to any preceding age, and will overcome the labor difficulties which harass the public, injure the workman, and damage capital. With the ethical spirit finding a lodgment in our old industrial communities, the newer ones must come under its influence so the labor troubles of the South will have less of the antagonisms and the animosities shown

in those of the North. I beg of you to take no stock in any cry of a labor war, but quietly exert all your influence in the interest of all movements which tend not only to elevate labor but to teach the employers of labor the necessity of their recognizing the utter worthlessness of capital until intelligent labor vitalizes the machinery it sets in motion.

I think we shall all agree that the wage system of labor is an improvement upon the slave system which the war set aside; certainly our prosperity must be secured under it for the present; but if it must give way, as it will some time, in order that the profits of production shall be more equally and justly shared between the two vital elements of all industry, labor and capital, I believe that the aristocracy of brains of which I have spoken, made up from the best minds of the two elements, will solve the question whenever it must be solved. It can not be solved now, for the very conditions which make the system of competition a necessity prevent its solution. I mean conditions of ignorance. The wage system, which now exists in all parts of our land, must hold sway until the leaders of industry and of labor are ready to work on the basis of the Golden Rule; that is, when capital is ready to associate itself with labor, not as its controller, but as its fellow, and when labor is intelligent enough to accept the fellowship. In every instance where this principle has been adopted in industrial establishments, and the instances are by no means rare, the solution of the labor problem has been met partially, at least, and the moral, sanitary, and intellectual conditions of the wage-workers vastly improved. The magical industrial developments of the present time are bringing all these questions more clearly to the minds of men, and as they become clearer our material prosperity will be augmented. These economic and social contests of the present may lead many to fear the advance of socialism, and lead others to hope for socialistic revolutions which will seek to remedy the social and industrial troubles of the day by tearing down old structures to the very foundation and building anew, instead of utilizing the existing structures in the work of progress. Here is an apparent contest for our near future. North and South the men who believe in demolishing the present structures and laying new foundations tell us that society is on the verge of destruction, and that it can be saved only by an entirely new industrial system. Well, my friends, society has always been on the verge of destruction. Socialism tells us nothing new in this direction, and only re-echoes old fears. But need we fear socialism,—have we been touched by it? Socialism is a growing power in the world,—not the iconoclastic socialism of the socialistic party, but the pure socialism which is molded and guided by wisdom, experience, and justice. This kind of socialism is a growing power because it has won partially in every revolution which has been waged for the rights of man. Our own Revolution was a war out of which grew the socialistic Declaration of Independence. It

was one of those revolutions described by Emerson which "are read with passionate interest," and which "never lose their pathos by time,"—revolutions "when the cannon is aimed by ideas, when men with religious convictions are behind it, when men die for what they live for, and the mainspring that works daily, urges them to hazard all." Every advance made by the country since that compact has been socialistic. The civil war resulted in giving the suffrage to millions of bondsmen, one of the most socialistic revolutions the world ever saw or socialists ever dreamed of; but all these movements have been in the interest of humanity, not to found a socialistic State—not iconoclastic endeavors to rid the world of evils—but the natural outgrowth of increased wisdom. In the growth of such socialism there is no danger, and under our institutions there is no room for any other. The communistic distribution of property would be a retrogression to the infancy of tribes. This is an impossibility. The only communism needed is that which increases the opportunities for securing property, for in the idea of property is the fountain head of our civilization; with and for its growth all our institutions of government have been framed; the comity of nations, which is the welfare of the world, take it for the basis of rule and action, and it is to its sacredness and to the inviolability of its rights we look for the further and continued progress of mankind. Certainly this is true of the American States, for the constant influx of strangers who come from less favored lands to better their own condition would soon put us at a disadvantage here were it not for the facilities offered by our laws and customs for acquiring property in land. Ownership of a bit of land makes the owner a law-and-order man. Herein is our safety against iconoclastic socialism; and herein lies the solution, to a large degree, of the negro labor question of the South. Industrial education and ownership of land will secure industrial peace in the South, and freedom from iconoclastic socialism. With education and ownership, we need not fear socialism nor anarchism, because the disciples of these two systems of philosophies, which are absolutely and diametrically antagonistic, constitute but a fringe of the body politic, and for either to make any headway it must convert the other, and the two then combine in converting the majority of the body politic. (a) As there is more religion in the world than of old, with perhaps less talk about it, there is more practice, more service to humanity, and less selfishness. This direction of affairs, altruistic in its nature, renders socialism harmless and makes it impossible for any but the right kind to enter into the economic contests of this country. Industrial progress kills destructive socialism and aids and furthers constructive socialism.

Another question is sometimes raised when the industrial progress of the South is being considered, and that is whether with Southern development there will not come some loss in the indus-

a Rev. Minot J. Savage.

tries of other sections of the country. I have no sympathy with such a query, for while there may be a change in the character of industries as the result of development, the permanent relations of different sections upon a basis of mutual interest will be founded, for the welfare of one must be the welfare of the other. The North is already losing some of its coarser productions, or rather they are being transferred to Southern States; but the North is taking pains to replace such industries with other grades and other lines, and as the consuming power of Southern labor increases and comes nearer to that of the Northern workers, the consumption of the products of the Northern mills and establishments increases, not only proportionately, but comparatively, in a greater degree than the relative increase of product in the South. As the consuming power of the common laborer in the Southern States is enhanced, the products of all parts of the country find a readier market. When the wants of the Southern laborer increase, through the increased standard of his living, he will need all that surrounds the Northern laborer; he will transfer his living from a log cabin to a frame house, he will carpet his house, he will furnish it on a scale commensurate with his changed condition, he will replace his corn-bread and bacon with finer food, and with an increased variety in his dietary. So, as he steps onto the plane of the English and the American workingmen, the Southern negro laborer will call for the things which the English and the American workingmen find essential to their comfort, convenience, and happiness.

Happily the Constitution of the United States forbade restrictions on the commerce between the States; so whatever may be the merits or demerits of the doctrine of protection, the great imperial trade of the United States is free, and as each section prospers all share the results. This should stimulate producers to aid in every way in their power to bring the producing and consuming power of the South up to the standard of its competitors. The United States cannot afford to have any section lag behind, either in industrial or educational enterprise, and the fact that every part and section of the country is putting forth its best efforts to secure to itself the results of its own resources leads to the most gratifying conclusions as to the future prosperity of the country as a whole. Political asperities, sectional prejudices, race jealousies, must all give place to industrial and social progress.

So, I would say to the men of the South: The outlook for the future demands that you push on, traveling along the lines now being traveled, absorbing capital from whatever source it comes, and putting the courage and the persistency with which a non-industrial community for four years fought against an industrial community into the development of the New South. You can take no step backward: you must push on under the new order of things. Make your country rich; make the labor that makes the country rich happy; meet the irritating difficulties as they come, in a spirit of justice and of kindness, and you will make the richest portions of the inheritance of our fathers the wonder of the world.



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